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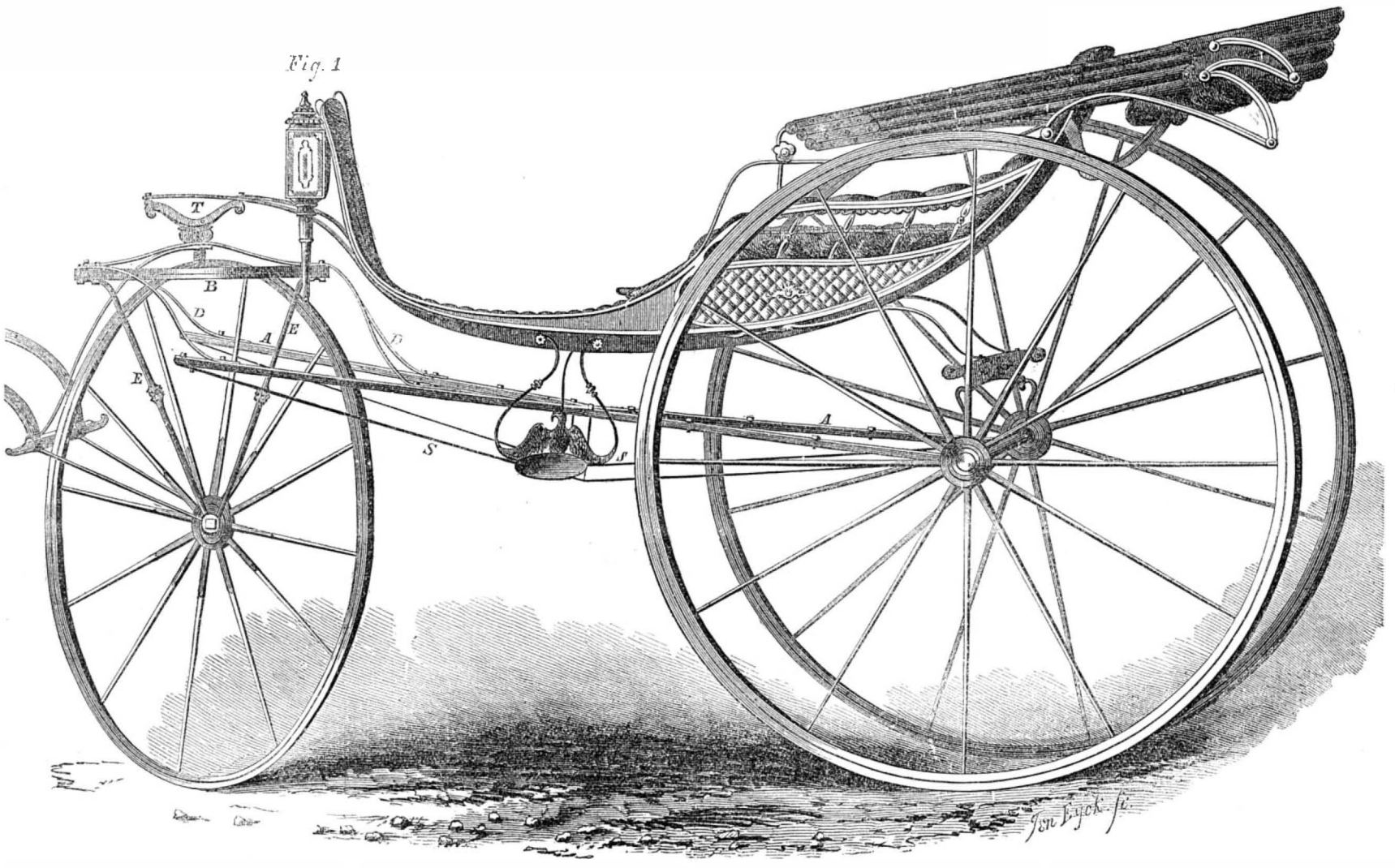
IMPROVED THREE WHEELED PHAETON.

There are are two very prominent objections to the use of our modern four wheeled buggies, which every individual who uses a carriage to any considerable extent, has doubtless observed. We mean the annoyance of getting in and out of the vehicle on account of the interference of the front wheels; they are perpetually in the way, and though the trouble is taken to turn the horse to the opposite side on which the passenger is getting in or out the wheel can seldom be turned sufficiently to prevent the clothing, especially of ladies, from coming in contact with the wheel.

The other imperfection we refer to, is that of turning the vehicle. We doubt not that the majority of accidents which attend the use of horses and carriages, occur in the act of turning, or when the horse takes to cutting up some unpleasant caper. Persons not skilled in driving, frequently attempt to turn the vehicle in too short a space. The result is, that the front wheel strikes the body, and raises one side to such an extent as to upset the carriage. This is especially the case when the horse becomes somewhat ungovernable and takes to backing.

It is these imperfections which Mr. Saladee proposes to overcome in his improved "Three Wheeled Phaeton," for which letters patent were granted to him on the 15th day of July last. The accompanying engravings illustrate the invention. The third wheel is placed directly in front of the body. Thus it matters not what position the vehicle is in when the horse stops, there is no hindrance whatever

Fig. 1



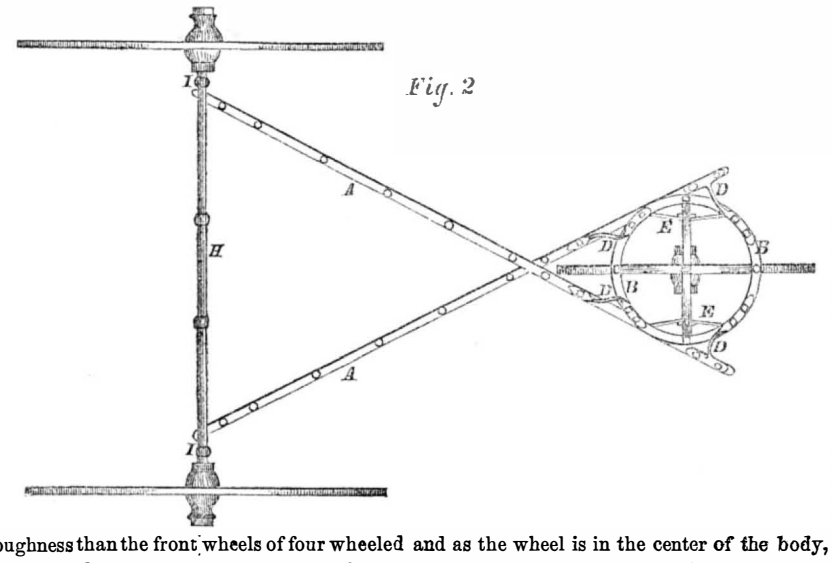
to getting in and out, and as the motion of this third wheel is not limited, the vehicle can be turned as short round as a vehicle on two wheels, and without the least cramping or straining of the body, or any part therewith connected.

Fig. 2 is a top view of the carriage with body detached, which will serve to illustrate the very simple manner in which the third wheel is permanently connected to the hind axle and wheels. A A are wood perches, one inch and a half square with a light iron plate top and bottom. The back ends are secured to the axle, H, by means of clips, I, and crossing each other, the front ends are secured to the horizontal "fourth wheel," B, (commonly known as the "fifth wheel,) by iron braces, D, which are firmly bolted to the perches. The horizontal fourth wheel is supported over the top of the third wheel, by braces, E, as seen in figure 2. The braces, S, on the bottom of the perches are applied with a view of stiffening them, and preventing lateral motion to the third wheel. When in the act of turning, the third wheel works under the perches, or rather, between the front fork of the same.

By this arrangement the front wheel is made to run perfectly steady, and as there are but three wheels, the friction of course is less, and consequently less resistence to draft. The vehicle is moreover rendered much lighter, presents a very light and airy appearance.

The body is suspended in front upon a "cradle spring," T, fig. 1, and in the rear on a half elliptic, supported by iron jacks near the shoulders of the axle.

Fig. 2



roughness than the front wheels of four wheeled vehicles. On country roads there is almost invariably a rough elevation in the centers, and as the wheel is in the center of the body, we would naturally conclude it must run on this center elevation on the road. But a moment's reflection will suffice to prove the contrary. Now, as the wheel works directly in the rear of the horse, it must necessarily pass over the smoothest part of the road. For the reason the horse cannot be driven along on this central ridge or elevation, but he will travel by the side of it, neither can he be driven over a large stone or stump, but he will go round it, and as the wheel follows directly in his track, it will likewise travel by the side of the ridge and round the stone or stump, in place of over it, as is commonly the case where there are two wheels in front.

At first sight of this carriage, there would seem to be an objection to the position of the front wheel, for the reason that, as it is directly in the center of the body, in front, it must of course travel in the middle of the road, in which case it would come in contact with more

The patentee has had one of these carriages (from which our engraving is taken) in actual and every day use for the past two months, and states that from the perfect manner in which it operates on all kinds of roads, together with the advantages it possesses over the ordinary "two passenger vehicle," he believes that it will, ere long, come into common use. This style of carriage appears to be well adapted for the practicing physician, and for business wagons, as well as pleasure carriages. The inventor is the editor and proprietor of the *Coachmakers' Magazine*, and is a practical carriage builder. He regards the above improvement as a very valuable one. Address C. W. Saladee, Columbus, Ohio, for further information.

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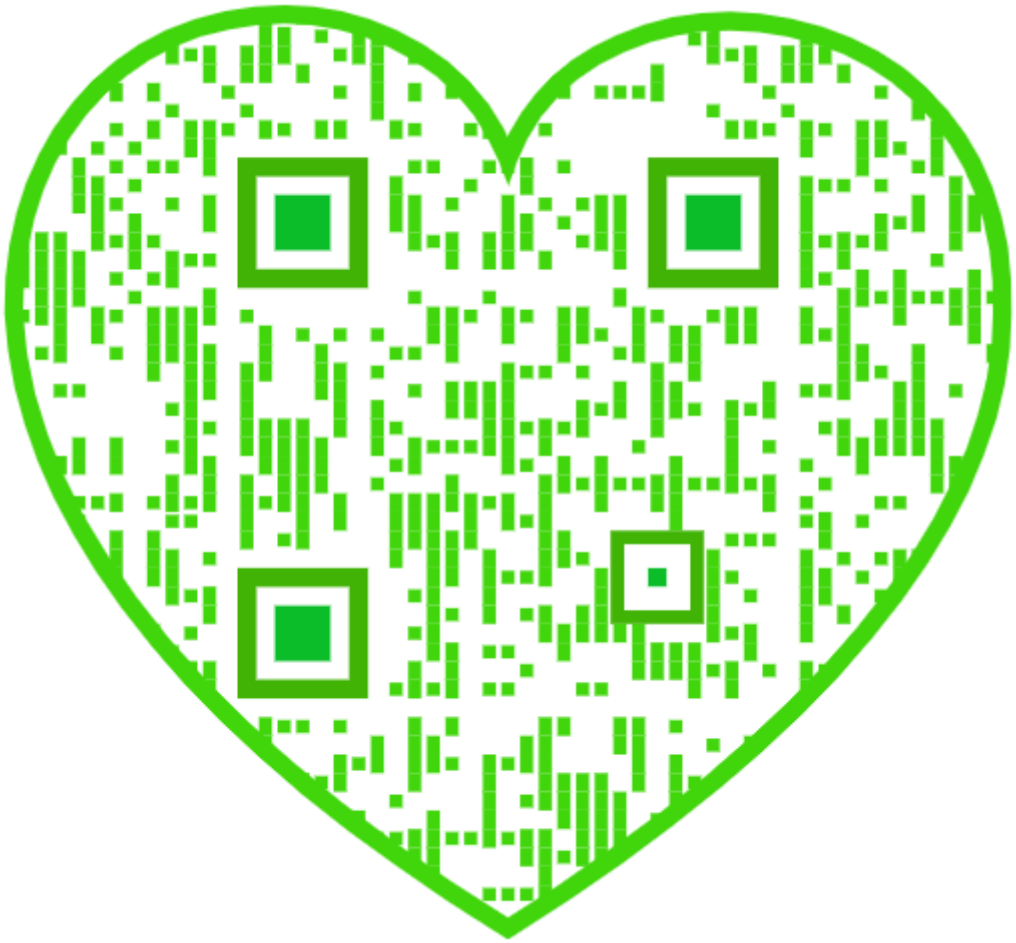

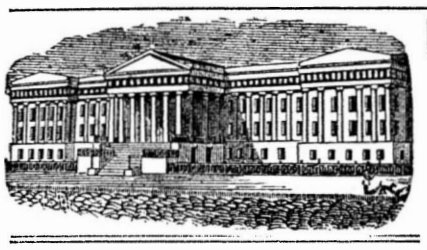

[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

issued from the United States Patent Office

FOR THE WEEK ENDING AUGUST 5, 1856.

FLY TRAP—Samuel Arnold, of Wilson Co., Tenn.: I claim the mechanical arrangement of box, jar, springs, lever, slides, and covering described for the purposes set forth.

WEATHER STRIP FOR DOORS—J. H. Banta, of Pier mont, N. Y.: I do not claim a weather strip applied on the bottom edge of a door or window, and kept to the sill by springs, as this has before been done; neither do I claim a double inclined latch.

But I claim the bar, e, constructed with the T-head, f, and fitted into the slot in plate c, substantially as specified.

I also claim, in combination with said bar, e, the double inclined latch, h, for the purposes substantially as specified.

REEL FOR FISHING RODS—John A. Bailey, of Jersey City: N. J., assignor to John Warren, of New York, N. Y.: I claim the sliding crank shaft, F, and spring, E, arranged as shown, or in an equivalent way, so that the pinion D, and wheel G, may be placed in and out of gear, as desired, and the reel, B, connected with and disconnected from the shaft.

MORTISING MACHINE—T. R. Bailey, of Lockport, N. Y.: I do not claim a rotating and vibrating mandrel, irrespective of the construction and arrangement shown.

But I claim the mandrel, H, fitted in bearings, I J, attached to sliding plates, L M, one of the bearings, I, being pivoted to the plate, L, and the other bearing, J, allowed to slide on the other plate, M, the mandrel, H, being vibrated laterally by the screw, f, worm wheel, g, eccentric h, pitman N, and bent lever O, the whole being arranged as shown for the purpose set forth.

SPIKE MACHINES—Moody Belknap, of Boston, Mass: I claim the improvement of making the movable knife, D, with a rectangular recess, f, for the purpose and to operate substantially in manner explained.

SEWING MACHINES—S. C. Blodgett, of Philadelphia, Pa.: I claim, first, the arrangement of the crimping notch, g, in the shuttle, for the purpose of drawing the slack thread from the needle, and thus preventing the loop of thread from being taken up a second time, as described.

Second, the employment of a series of pawls or drivers around the circumference of a discoidal or circular shuttle, whereby the driving force is applied equally or nearly so, through a considerable arc of the circumference of such shuttle.

Third, the mode of driving the disk shuttle at its circumference by means of a hollow pulley or sleeve, B, revolving around a fixed shaft or axis, C.

Fourth, the mode of giving motion to the needle arm and feed rollers by direct connection with the same sleeve or revolving shaft, to which the drivers are attached, which drive the disk shuttle, substantially as described.

Fifth, the arrangement of the cams, C C', and lever k' for operating the slide k, in combination with the cam e, and arm H, for operating the pressure pad, in the manner and for the purpose described.

SEWING MACHINES—Joseph Bond, Jr., of Philadelphia, Pa.: I claim, first, the driving of the spool case G, by placing the latter on a stationary spool case holder, within a cylindrical driver, having any convenient number of internal teeth, the driver being situated eccentrically with the holder, so that the internal teeth of the former may catch into the recesses in the edge of the spool case, and cause the same to revolve, at the same time leaving a space between the holder and the driver on the side opposite to that where the teeth act on the spool case for the play of the needle and its thread.

Second, the hooked lever, L, in combination with the cam, n, on the driver, E, arranged and operating substantially in the manner and for the purpose set forth.

BRICK PRESS—John Boynton, of East Hartford, Conn. I do not claim a brick press composed of a revolvable molding cylinder or prism, having molds placed in its perimeter or cylindric surface, a mechanism for supplying or filling clay into the molds, a pressing mechanism, a discharging mechanism, and a mechanism for imparting to the molding cylinder an intermittent rotary motion.

But I claim the rotary matrices, a a, and the plate, C, in which they are formed, hopper K filling plunger L, compresser C, bed or mold plate, B, and discharger, V, arranged in relation to and in combination with each other so as to be operated by mechanism, as described.

ATTACHING AND DETACHING BOATS—J. M. Brooke U. S. N.: I claim the application to boats and their hoisting and lowering apparatus, a bolt with a hollow head, opening on and forming part of a curved channel, or deflecting surface; having also a curved slot to correspond with the channel so that a ball fitting conformably thereto will, by the force of gravity, when permitted, follow this curve and be turned aside, and moreover will be prevented from re-attaching itself to the bolt if passing up and down before the aperture.

I also claim the arrangement of a cock or prop let into the side of the deflecting surface, so as to secure the ball in the head of the bolt when required, but offering no obstacle to its entrance.

WATER CLOSETS—W. S. Carr, of New York City: I am well aware that cocks have heretofore been fitted in such a manner as to avoid any sudden motion in either opening or closing; therefore I lay no claim to so doing.

I am also aware that a given amount of water leakage has been used to prevent a sudden motion in cocks, balances, meters, and a variety of other instruments: therefore I do not claim the same.

I claim the valve, g, with its cylinder 3, and openings x, constructed and acting in the seat 2, in the manner and for the purposes substantially as specified.

I also claim the cup leather, m, in the cylinder, k, fitted with the required amount of water leakage, when combined with said valve or cock, g x 3, and spring, i, the whole constructed and operating substantially as specified.

I also claim unlatching the pan, r, from the lever, p, to empty the contents thereof, and then retaining said pan in its depressed position while being washed out by providing the notch 10, pin 11, and hook 12, the whole constructed and acting in connection with the gradual motion of the stern, h, of the valve, substantially as specified.

ENVELOPE—W. H. Coates, of Philadelphia, Pa.: Although as an extra secure means of fastening envelopes, I have shown the same as furnished with double wafers attached together by means of strings, I do not desire to confine myself to their use, as the adhesive materials, independent of the connected wafers, afford an efficient security.

But I claim the construction of envelopes with an extra turn-down, e, said turn-down being furnished with adhesive substance, and being arranged substantially in the manner and for the purpose set forth.

BAGASSE FURNACES—S. H. Gilman, of New Orleans, La.: I claim the combination of a dome covered cylindrical chamber A, having a circular base with a draft door located at E, an arch covered second square chamber B, a pit D, a heat conduit or throat K, when constructed, proportioned, located, arranged and combined in the manner and for the purpose set forth and described.

I also claim the location in a bagasse furnace of the draft, door, or opening through which the air is admitted to support combustion, at or near the hearth level or fire bed, and directly opposite the opening through the products of combustion leave the first chamber of the furnace, and in the vertical plane passing through the center of the two chambers, A and B, and the center of the opening where the two chambers unite, when the hearth of the second chamber is substantially on a level with the hearth which supports the baggasse to be burned.

ICE BREAKING BOATS—Henry and William Brown, of Philadelphia, Pa.: We claim the formation of a recess in the bows of a steamboat, said recess having inclined shelves, E and E', anguiar terminations, F and F', and angular rib, G, in combination with the guards, H and H', the whole being arranged and constructed substantially in the manner set forth, for the purpose of breaking a channel through ice, and directing the broken pieces under the ice remaining on each side of the channel.

SASH SUPPORTER—C. H. Dana, of West Lebanon, N. H.: I claim the lever, C, with roller D, on axle or pivot, a, arranged and operating in the inclined groove, d, as described and for the purpose set forth.

PRINTING PRESS—W. H. Danforth, of Salem, Mass.: I do not claim the broad use of a type form, when it is required to be run out upon a stand placed outside of the platen, between every impression, to allow the types to be inked.

But I claim, first, the traveling bed plate and its attachments, as described, substantially in combination with the bed, B, worm, C, shaft and crank, C', or their mechanical equivalent, and table A'', the whole being arranged and operated substantially as described, and for the purpose shown.

Second, I claim the improved manner that I have designed, forming the two sets of griping bars, I I', for insuring an equal gripe upon the sheets throughout their whole length, as set forth, and in the manner of arranging the two sets of endless chains to which they are attached, so as to allow the two sets of griping bars to act together continuously, upon the leading edge of the sheet from the time that they seize upon it until it is discharged, printed, from the machine. And also in the manner of insuring precision, and exactness of action to the griping bars, at the time that they seize upon and relax their hold upon the sheet, by the employment of the bar separators, m m', and brush, P, the whole being arranged and operated in a manner substantially as described and shown.

Third, I claim the movable or vibrating guide and gauge frame, f, constructed, arranged, and operated in a manner substantially as described, for the purpose of holding the ends of the curved griping bars together, while they are required to gripe the sheets, and for giving to the cross-strings, e e e, by means of the side lips or flanges 6, 6, &c., their required degree of tension to enable them to hold up the center of the sheets between the cross bars, while passing them across over the types, and also enable them to withdraw the printed sheet from off the face of the types, by not allowing the chains, H H, to be displaced from the lines that they are required to travel in, by this act, and for guiding the two sets of chains, H H', and their attachments across in a line above the face of the types, and pile of discharged sheets, substantially as described and for the purpose shown.

Fourth, I claim the employment of a series of pendants, O', suspended from movable top pieces Q, so that they can be moved in or out, to adapt them to the various widths of sheets required to be printed, and keep them always in lines that are parallel to each other, substantially as set forth, for the purpose of uniformly guiding the discharged sheets as they fall to the pile.

Fifth, I claim the device employed for giving the necessary interval of rest to the feeding chains, griping bars, &c., at the time that the impressions are to be given, consisting of the feeding pulleys, J J, feeding wheel L, ratchet wheel M, pawl h, stud h, adjustable grooved disk wheel N, wheel L', cam disks i i, pawls k, pins b b, and brake levers o o, as specified.

Sixth, I claim feeding the ink supply apron between the pressure roller U, and the periphery of the ink fountain roller, V, in a manner substantially as shown, for the purpose of insuring a graduated and an equal deposit of ink upon all parts of its surface, for the purpose shown.

CARPET FASTENINGS—S. R. C. Denison, of Rochester, N. Y.: I claim my method of fastening carpets by means of the metallic cams attached to the base board, which cams not only hold the carpet firmly in its place, but afford facilities for its instantaneous removal in case of fire or other emergency, said cams being constructed and operating substantially as described.

It being understood that I do not claim the use of buttons for fastening carpets, they having been before used in other ways, as in the fastening of Wm. Loughborough, patented June 5, 1855, but claim only the manner in which they are applied, as specified.

METAL PAVEMENT—S. B. Ellithorp, of New York. N. Y.: I do not claim the use of metal blocks for pavements, nor the use of blocks with grooved arches without interstices between the arches, nor the use of cement, gravel or sand, to fill the interstices of metal blocks for pavements.

But I claim a metal block for pavements, formed of a series of groined arches, alternating in position and connected to ridge or string pieces with interstices between the arches to be filled with cement, gravel or sand, as specified.

COMPRESSED AIR R.R. SIGNALS—John W. Fowle, of Cincinnati, O.: I claim the arrangement of the valves 25 26, with the air chest 24, when acted upon by compressed air for the purpose of setting in motion the alarming apparatus for purposes stated.

I also claim the arrangement of the levers, 18, rods 22, levers 27, 20, and 23, rods 40 and lever 39, catch plates 36, 37 and 38, and springs 29 and 30, and these arranged with the shafts 9, 9, and levers 10 and 11, for the purpose of resetting the alarming and signal apparatus, as described, when operated on by the lever valve 26, for the purposes mentioned.

WRENCH—Lorenzo D. Gilman, of Troy, N. Y.: I do not claim inserting a forked piece of metal with a square shank upon one end, in the square slot of the axis of the wrench and supported by a nut; neither do I claim the teeth on the axis; neither do I claim the pad, those having been used prior to my having any knowledge of wrenches.

I claim the use of adjustable jaws, E E, as described, moving in the slot, C C, and operated in connection with the groove in the jaws, forming an adjustable socket, in the manner set forth.

BREAKING ICE—Isaac H. Giffing, of New York City: I do not claim a pointed iron or steel for breaking ice.

But I claim the looped rod, the sliding ball or weight, and the point, all in connection, as set forth, using for that purpose any metal of any size or shape that may be necessary for the purpose of ornament or for attaining the object in view, viz., breaking ice.

KNITTING MACHINES—Augustus J. and Demus Goffe, of Cohoes, N. Y.: We are aware that machines have been made which have a complete converging series of latch needles arranged in a circular plane to slide endwise and down the yarn from a yarn carrier around stops arranged between the needles to take up enough yarn for the new loops; and we know that machines are in use which have a complete converging stationary series of fixed needles arranged in a plane; but our invention, as described, is not embraced by such machines.

We claim the employment of a stationary circular converging series of hooked needles, arranged in a plane and made to slide in respect to the revolving or traveling yarn carrier and presser, and also in regard to the stationary ring of stops, c c, as described, in connection with the inside web guide, C, or its equivalent, as set forth, for knitting plain tubular work.

LOCKS—Joseph M. Lippincott, of Pittsburgh, Pa.: I claim the use of a stationary tumbler chamber with movable wards and tumblers, in combination with the fence, H, constructed and arranged substantially as set forth.

I also claim the use of an aperture, n, in the tumblers, t, into which the grooves, g'', for the passage of the fence open, but distinct therefrom, for the purpose of allowing the tumblers to resume a position in which the grooves are out of range while the fence is yet engaged in the tumblers, substantially in the manner and for the purpose set forth.

GUIDING LINE FERRY-BOATS OR FLYING BRIDGES—William A. Jordan, of Thebodeaux, La.: I am aware that James Parks proposed the employment of a grooved wheel or pulley block with a rope attaching it to a boat guided by an ordinary steering oar, when said wheel was used as a traveler on a tight cable stretched overhead from bank to bank, as a means of crossing streams by the force of the current. I therefore do not claim this as my invention.

I claim the vibratory lever, D, constructed substantially as described, and arranged and operated with a cable in the manner and for the purposes set folth.

LIGHTNING RODS—David Munson, of Indianapolis, Ind.: I claim constructing a tubular lightning rod with spiral flanges, one of which is left open or divided its entire length, for the purpose of admitting the electric current to the inner surface of the rod, to diminish its intensity and mechanical effect, substantially as described.

PENHOLDER—T. Kenton Lyon, of Richmond, Va.: I disclaim lips and all improvement in pens, also guards of any kind not forming a deep annular space around the pen, as described. I distinctly disclaim any improvement on, or application of improvement to pen and pencil cases of any kind.

I claim, on the common straight penholder, the guard, B, attached to or made part of the holder, forming a deep annular space around the pen, or that part of the holder where the pen joins it, for the purposes set forth.

CORN AND COB MILLS—Jacob O. Joyce, of Cincinnati, O. Ante-dated Feb. 5th, 1856: I claim the arrangement of the segments, I, on the upper cone, and the segments, K K', on the lower cone, so that the former shall pass through between the latter, gradually contracting the spaces between their crushing surfaces, substantially as set forth.

COLORING PHOTOGRAPHIC PICTURES ON GLASS—D. B. & A. B. Spooner, of Springfield, Mass.: We do not claim the coloring of a picture all over with a single tint.

But we claim the application of gum arabic or other equivalent material, as set forth, for the purposes described and no other.

STRAW CUTTERS—J. H. Gooch, of Oxford, N. C.: I claim providing a support, F, on the axle, B, and having the axle stationary and the knife revolve on the same, substantially as and for the purposes set forth.

BLANKS FOR BANK NOTES, BILLS, &c.—Peter Hannay, of Washington, D. C.: I claim the combination of the arts of photography and printing or writing, or both, in the manner substantially as and for the purposes set forth.

ROTARY KNITTING MACHINES—S. W. Park and Edgar S. Ells, of Troy, N. Y.: We claim combining together two annular series of hooked needles with a sinker, two pressers, and a web guide, D, or its equivalent, substantially as set forth, for use in the production of ribbed work, as specified.

And we claim the manner of arranging two annular sets of needles in relations to each other, that is, arrang them together, so that the hooked ends of the needles of one set are parallel or nearly parallel with, alongside of, and pointed in the opposite direction to those of the other series, as set forth.

We also claim the improvement of arranging the sinker, C, substantially as described, to increase the distance between the yarn and the old loops of the second set of needles, just before the barbs of the needles are pressed.

And we claim the improvement of arranging the cam, B, so as to spring out the ends of the second set of needles, substantially as described, and for the purposes specified.

And we claim the improvement of holding the needles of an annular series in place on the grooved needle block, or its equivalent, by the ring, A, constructed, arranged and operating as set forth.

DOOR STAY—Anson H. Platt, of Yellow Springs, O.: I claim the use of the bolt, 6, the lever, 7, and the dog, 5, arranged and operating in the manner and for the purposes set forth.

HEATING FEED-WATER APPARATUS FOR STEAM BOILERS—John R. Sees, of New York City: I do not claim heating the feed water for boilers in pipes placed between the feed pump and boiler; neither do I claim heating the feed water by the escape heat of the boiler.

But I claim the heating pipes, J, and the branch pipes, G and H, with the chamber containing the double-acting check valve, L, and the circulating pipe, K, all arranged below the water line of the boiler, in the manner and for the purposes set forth.

COMBINED STEAM AND HOT AIR COOKING STOVE—John Shopland, of Honesdale, Pa.: I am aware that a pan of water has been placed in an oven for moistening the air therein, and that steam has been introduced into a chamber for steaming meats and vegetables. These I do not claim.

But I claim the arrangement of the boiler outside and independent of the oven, so as to have the hot air and steam at variable temperatures, and mix them at pleasure, or as the character of the cooking may require.

BREECH-LOADING FIRE-ARMS—Gilbert Smith, of Buttermilk Falls, N. Y.: I claim, producing a flexible lip, b, from the solid metal of the rear of the chamber, to operate as and for the purpose set forth, by forming a groove, a, around the chamber at a short distance from the extreme rear thereof, substantially as described.

HEMP BRAKES—Meriwether Thompson, Jr., of St. Josephs, Mo.: I do not claim a compensating pitman as such.

But I claim the arrangement of a compensating pitman when applied to a hemp brake, and constructed substantially in the manner and for the purpose described.

I do not claim cone pulleys for varying the speed of my machine, nor the slotted arm and shifting pitman to vary the stroke of the brake.

But I claim the arrangement described of the cone pulleys or equivalent mechanism for varying the speed, and the arrangement of the slotted arm, 7 8 9, and shifting pitman as described, in such relation to each other that by the described connection between them, through the shifting lever, X, and the cord, 18, any change of speed shall effect a corresponding change in the stroke of the brake.

STUFFING LEATHER—Francis A. White of Roxbury, Mass.: I am aware that other oil has been combined with hides and skins in the process of tanning, as in the American patent of Keeler. But my mixture of tallow and oil could not be so used, because the tallow and oil, on being brought into contact with water at the temperature used, would separate from each other, and the consistence of the mass of oleaginous matter used by me is such that nothing less than the pounding operation of a fulling mill or other equivalent machine would be sufficient to fill equally the pores of the skin with such a mixture. While therefore I disclaim the use of any such rotating apparatus as used by Mr. Keeler aforesaid, or that used by Vanquelin for charging skins, &c., with oleaginous matter.

I claim the mode of stuffing leather, substantially as set forth, whereby I dispense with the usual time required in drying before stuffing, and render the neck and flank parts a superior quality of leather.

BOLT FOR VAULT AND SAFE DOORS—Linus Yale, of Newport, N. Y.: I claim an arrangement of bolts or bars, which are self-acting, in the manner or an equivalent manner to that described, and for the purposes set forth.

SECURING TYPES ON ROTARY BEDS—Hichard M. Hoe, of New York City: I claim securing or holding the column rules, a', in their places on the bed by means of the feet, a, which fit in rebated grooves in the bed, and have plates or keys, b, fitted over their lips or edges, b', substantially as shown and described; and I claim this, whether the strips or plates, B C D E, are used in the usual quoins, a, or any other device for wedging or binding the types and rules in the bed.

RE-ISSUES.

BAGASSE FURNACES—Samuel H. Gilman, of New Orleans, La. Original patent dated Dec. 4, 1855: I claim combining with the receiving chamber a square mixing or second chamber, whose hearth is substantially level with that of the receiving chamber, B, separate and distinct from the heat conduit or flue which conducts the heat to the boilers, and located between the aforesaid heat conduit and the receiving chamber of the furnace, and combined with the bagasse furnace for receiving the products of the burning bagasse, mixing mechanically and perfecting the combustion of the gases thereof after they pass out of the first or burning chamber, and before they enter the heat conduit or flue, and thereby promoting the deposit of the solids, substantially as described, whether the said second chamber, B, is provided with a pit, D, or not.

I also claim the use and adaptation of the pit, D, located in and combined with the second or mixing chamber, B, as an auxiliary to increase the agitation and perfect the mixture and combustion of the gases, and also to promote the deposit of the solids, substantially as described.

DESIGNS.

DRAWER PULLS—P. & E. W. & J. A. Blake, of New Haven, Conn.

STOVE PLATES—N. S. Vedder, of Troy, N. Y., assignor to G. F. Filley, of St. Louis, Mo.

PARLOR STOVES—Samuel Pierce & J. J. Dulley, (assignors to Fuller, Warren & Morrison,) of Troy, N. Y.

COOKING STOVES—Samuel Pierce and J. J. Dulley, (assignors to Fuller, Warren & Morrison,) of Troy, N. Y.

The Morse Telegraph in Europe.

Prof. Morse who is now in Europe, has received great attention from the most scientific men, and the most eminent electricians in England. At a dinner recently given by Mr. Brett to the gentlemen connected with the telegraph, Mr. Brett toasted Prof. Morse, and in a speech bestowing upon him the highest encomiums, declared that his system of telegraphing was now the universal system. Dr. O'Shaughnessy, who is Superintendent of all the East India Telegraphs, seconded Mr. Brett's remarks, and stated he had made a report to the East India Company, recommending the substitution of Morse's instruments on all the lines for the Needle Telegraph they have hitherto used. He pronounced Morse's system not only the simplest, but the best ever invented, and the only one worthy of universal adoption.

A correspondent of the Philadelphia *Ledger* says:—

"In Paris, also, Prof. Morse was received by Count de Nourhy, the Director General of Telegraphs, with the utmost courtesy, and being ushered into the telegraph rooms of the central station, about thirty instruments of his invention welcomed him with the music of their filial voices.

A reminiscence made this scene peculiarly interesting. These instruments were in the building which formed the central station of the French Semaphore Telegraph, by whose outstretched but now unmeaning arms, it is still surmounted. In that same building, eighteen years ago, Prof. Morse exhibited his instrument, and endeavored, in vain, to satisfy the managers of the Semaphore that he had brought them a superior system. What he could not do for his instrument it has done for itself, and now it constitutes the only telegraph in the French empire."

Submarine Blasting.

A ridge of hard concrete, near Governor's Island, in the harbor of New York, is now undergoing demolition, by the simple process of submarine blasting without boring. The ridge—named Diamond Reef—is 300 feet long and 40 wide, the water is 16 feet deep on it at low water; the reef is to be reduced 6 feet, leaving 22 feet depth of water, at low tide.

The contract, to reduce it was taken by Messrs. Husted & Kroehl for $35,000, and there is every prospect of these contractors accomplishing their object, with promptitude and profit. Large tin cannisters attached to the lower ends of strong pointed stakes, and filled with powder, are sunk to rest on the face of the reef, and are discharged with a galvanic battery. The weight of the superincumbent column of water, when the blast is discharged, assists to make the expansive force of the powder act powerfully on the reef in a downward direction, and laterally, thereby riving and disintegrating it with rapidity. Some of our cotemporaries call this blast the "Paisley Blast," instead of the *Pasley*—after Col. Pasley, who first applied it some years since to remove concrete shoals in the river Thames. Mons. Maillefert first introduced it, we believe into our country, and he obtained a patent for it, although, as we then pointed out, the invention was quite old. This system of submarine blasting is one of the most useful inventions ever discovered, for removing concrete shoals in navigable rivers and harbors—its value is but beginning to be properly appreciated.

The Telegraph in the East Indies.

In two years four thousand miles of telegraph wire have been erected in India. Calcutta, Bombay, Madras, Delhi, Lahore, are now telegraphically united, and six thousand miles of new lines are in the course of erection. No. 1 galvanized iron wire is used. The wires are erected on strong durable posts, like those in our own country.

An American Block for Watt's Monument.

A fine monument is about to be erected to the great improver of the steam engine, James Watt, in his native town, Greenock, in Scotland, and a fine large block from the Seneca quarry on the Potomac, Md., has been received for it from Gilbert Cameron, the builder of the Smithsonian Institute, Washington.

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History of American Friction Matches.

I notice in No. 44, Vol. XI., SCIENTIFIC AMERICAN an article upon Friction Matches; perhaps I may be able to give you a little light upon the subject as to who was the first American inventor and manufacturer,—or at least tell you what I know to be a fact.

In the latter part of August, 1835, a friend handed me two friction matches as a curiosity, the like of which I never saw before. They were tipped with red composition, and were said to be imported; he said that he had purchased a whole box full of them, and snapped them nearly all off, "just to see things." Being engaged at that time in the manufacture of lucifer matches at Mechanicsville, N. Y, I received them as a treasure. I immediately set my wits to work to unravel the mysterious little sticks, or rather the compound upon their ends. Not being much of a chemist at that time, I found it "no go," for I did not like to try any experiments with such a small and precious treasure. After trying all the chemical heads and M. D.'s in the neighborhood, I found them to be quite as much puzzled as my own self.

I now took my two matches to Albany, a distance of twenty miles; my sole business was to find a chemist that could analyze them. I was referred to Prof. Beck, Professor of Chemistry in the Female Academy. The Professor told me that the quantity was so small that he did not like to undertake it, but if I would bring him a larger quantity he would analyze them for me; but this I could not do, for there was nothing of the kind in market. I carried my matches home again, and examined them with care, and made up my mind from the smoke and light that they emitted in the dark, that they contained the article of posphorus. The next morning I obtained a piece of phosphorus from one of our physicians, and a little gum arabic, and went to experimenting, trying to combine them in a clam shell, on some hot coals. The first batch took fire and burned up. Nothing daunted I got another piece (all he had,) and went to work a little more systematic, and succeeded well by adding a little chlorate of potash. My next job was to furnish myself with match sticks strong enough to bear rubbing (for my lucifers were too thin to bear much friction) and this I did in the following manner:—After sawing some pine blocks of suitable length. I took a common case-knife, hammer, and lapstone, and slabbed them off; after this I slit them up with my penknife until I had on hand about 1400 match sticks; I then charged them with brimstone. I now procured a shallow square box, and filled it with damp sand, and commenced dipping my matches, one at a time, sticking each match in the sand, charged and up, until dry. These 1400 matches I sold at one man for fourteen shillings. I then started for Troy, in search of phosphorus,—searched the city through, then went to Albany, searched all the drug stores, and got but about *four ounces* in both places, and paid at the rate of $2400 per pound; and this, I think, was the first of Loco Foco Match Making in the United States.

I had manufactured matches of this kind for about fourteen months prior to the issuing of Mr. Phillips' patent (but used no glue or chalk.) You state that in June, 1837, John Ritfield obtained a patent for dipping matches by planing them in a conical tube. This is true, but the name ought to have been *Jehu*, instead of John—the mistake occurred at the Patent Office; I wrote to the Commissioner who told me that he would have it altered if I would send him three dollars. But I thought it would not pay, from the fact that I had, in the mean time, invented a better plan, namely, that of glueing one end of the block before splitting it. I applied for a patent on this in 1839, but unfortunately had let it run too long, and was rejected on that ground.

I find at the present day the same old match splitter, in all of the small shops, which I first invented and used. But to give you but a fair history of the "little blessings," would require more time and patience than I am able to bestow at present. In all my experiments I was associated with Mr. Joel Farnam (now deased,) of Mechanicsville, and Martin Day, of Westfield, Mass., who can attest to the above facts.

I would say that if any other man will step forward and give better evidence of his being the first American inventor and manufacturer, then "I'll give up the skates."

JEHU HATFIELD.

Troy, N. Y., 1856.

Artesian Well Sinking.

MESSRS. EDITORS—I have seen a paragraph going the usual newspaper routine, stating that an eminent French engineer had adopted the use of wooden rods instead of iron ones, for connecting the auger, and other tools used in sinking artesian wells, with the power above. This plan has been used in this country for more than twenty years.

We always use the wooden rods, and apply what weight is necessary at the bottom, next to the drill; and while drilling a hard rock we use a link connection between the iron and wooden rods, to prevent the shattering of the latter. The American plan I consider better in every respect than the European methods formerly practiced.

We hear much about the Paris artesian well, and it was a great and successful undertaking; but there are many wells in this country quite as efficient, if not so expensive and renowned. I. H. S.

Augusta, Ga., 1856.

Recent Foreign Inventions.

Dressing Cloth.—G. Collier and J. W. Crossley, Eng., patentees.—A common method of pressing many fabrics, to take out wrinkles in them, and give their surface a smooth beautiful appearance, is by folding the cloth—broadcloth or soft merino twill—and placing sheets of pasteboard between the folds, then placing the folded fabrics on hot metal plates in a pile, in a press, and submitting all to pressure. Another method of finishing cloth is to wind it around a cylinder—the laps being laid with the nap—and then covering it with a blanket, and submitting the roll to steam heat. The improvement claimed by the above patentees consists in the using of hollow plates for flat pressure, as substitutes for the solid plates now employed in the press. The hollow plates are to be heated by steam through flexible tubes, instead of being heated by placing them in the usual way on the top of a furnace. The method of heating the plates by steam is the most convenient, and is the best method of regulating the heat of the plates, and keeping up their heat. The use of thin plates of polished tin are also claimed as substitutes for sheets of pasteboard between the folds of the cloth.

Anti-Bilious Powder.—J. B. Lopez, Eng., patentee.—This powder is simply composed of 1 1-1 lbs. of calcined magnesia, and the same quantity of white sugar, all reduced to a fine powder in a mortar, and to which is added 25 drops of the essence of anniseed, and all thoroughly incorporated together. A tea spoonful is sufficient for a powder. Except in cases of urgent necessity, the use of magnesia should be carefully avoided.

Paint for small Iron Articles, to Prevent them Rusting.—B. Rosenburg, London, patentee.—The iron is first well cleaned and smoothed, then it receives two or more coats of a paint-varnish composed of 100 lbs. of triturated white lead, mixed with 2 1-2 gallons of copal varnish and 1 1-8 gallons of turpentine, and the same quantity of linseed oil—a small quantity of red lead may be added to color it. This paint-varnish is laid on very thin for the first coat, then the articles are placed in an oven at 250° Fah. for 6 hours, then transferred for 3 days to a warm room, at 70° Fah. The articles then receive a second coat, which may be thicker, and contain a little less turpentine; and then they are dried in a similar manner. This method of preventing the corrosion of iron articles is stated to be an excellent one for protecting sugar molds. The molds must be scoured with sand and emery paper before the first coat is put on.

Pressing Hay for Transportation.—J. Gardner, of London, has applied for a patent for using heat in pressing hay into bales, for the purpose of enabling him to reduce the bulk of the bales in proportion to their weight. The increased reduction of the size of hay bales by the use of heat in the press will not pay for the expense of heating the hay.

A Lung Gas and Steam Engine.—T. Tuckey, Eng., has secured a patent for a new and droll kind of engine, which, he declares, is better adapted for locomotives than those now in use. For the metal cylinders and pistons, now employed, he substitutes air-tight strong flexible chambers, to be constantly dilated and contracted by the entrance and exit of steam or gas. This engine will, no doubt, achieve for itself the distinction of being buried in forgetfulness.

Self-Acting Egg Hatching Machine.—J. Martin, Eng., patentee.—In this egg-hatching apparatus water is poured into one of certain cylinders or water vessels, and flows through hollow shelves beneath the egg trays, and into a cylinder on the opposite side. When the cylinders are nearly full, lamps are lighted underneath.

As the temperature of the water rises, the air within a glass expands, and depresses mercury contained within a chamber; this causes a float to rise, and act upon a lever attached to a chain or wire of a valve. Should the heat of the lamps cause the temperature to rise above 105° Fah., the float will be sufficiently elevated to act upon the lever of the valve, and raise it from its seat; this causes a quantity of cold water to flow down the pipe into the cylinders, which immediately reduces the temperature to the proper degree.

Notes on Patented Inventions.—No. 18.

Manufacture of Soap.—Pure white soap is composed of fatty acid, an alkali, and water In 100 parts of soap there are 63 of fatty acid, 6 5-10 of alkali, and 30 5-10 of water. The process of making hard soap is not so simple as that of soft soap. White or curd soap is made of the finest tallow or suet only, and boiled to a thicker consistency than other soaps, upon a stronger alkaline lye, and before it is put into the frame to cool it requires *crutching*. This consists in stirring it about in an intermediate vessel between the boiler and the cooling frame, to break and mix the curd. Nothing but the best materials are used for this soap.

All our common brown soaps contain resin. Colophane or resin is soluble in a caustic alkali, hence its adaptability to increase the quantity of our common soaps. Its use is so common, and as it produces a lather with water it is not generally held to be an adulteration, still it does not produce proper saponification. The quantity of fatty matter required to make a tun of perfect soap is 1540 lbs. From eight to ten per cent. of this fatty acid is converted into glycerine, and owing to the limited use made of this substance it may be called waste.

The most convenient and cheap alkali for manufacturing soap is sal soda—the carbonate of soda manufactured from common salt. It will not make soap by boiling it direct with grease, as it contains too much carbonic acid; it must be prepared for use by dissolving it in about five times its weight of water, then adding half its weight of fresh slacked lime. The carbonic acid leaves the soda, unites with the lime and forms chalk, which sinks to the bottom of the vessel. The clear liquor is caustic soda lye, fit to be boiled with tallow, oil, or fat, to make soap. In soap works, the soda lye is deprived of its carbonic acid in vats prepared for the purpose; but any person may make hard soap from soda lye by a very simple apparatus, viz., a wash tub, and a small tin or iron boiler.

It is not our intention to give a full description of the processes for manufacturing soaps on a large scale; our "Notes" are general on points where information can easily be obtained, but *particular* respecting some things that are not so well known.

The most recent work published in our country on Soap and Soap Making is that of Campbell Morfitt, by Parry and McMillan, of Philadelphia,—a good treatise. Another work, and a very excellent one also, is that of Kurten, being a translation from the German, published by Lindsay & Blakiston, Philadelphia. Different soap makers employ different methods of working; and we know one not many miles from New York City, who pursues the methods described in Dr. Ure's old Dictionary of Chemistry, published in 1823. Soap making is not an art which has undergone much improvement for many years. Tallow, suet, lard, oils, resin, fat from deceased animals, and boiled bones, are the most common materials employed in soap making. It has been proposed to make soap from cotton seed oil, and we have a sample of such soap in our possession; Edgar Conklin, of Cincinnati, has made soap direct from the seed, and there are some prospects of his being successful in its manufacture on a large scale.

In England palm oil is now extensively employed for making soap; 40,000 tuns of this substance is consumed annually for this purpose, and the consumption of it is increasing rapidly. It is obtained from Africa, and is an economical material. Fish oil and vegetable oils of every description can make soap by being boiled with caustic alkali, and thickened, if required, with salt. A grand discovery in the manufacture of hard soap would be the saving of the glycerine by combining it with the soap.

Fancy Soaps.—Those small cakes of perfumed soaps used for the toilet can easily be manufactured by dissolving common bar soap of any kind, and adding perfumed ingredients and coloring matters—if the latter are desired. The bar soap is cut up into thin slices placed with a small quantity of water in a pan over a fire, and is stirred until it is reduced into a paste. The perfumes are then added, well stirred, and the soap run off into a flat frame or dish, and set in a cool place. In the course of three days it is fit to be cut into cakes, and stamped with any ornamental figure or name. In establishments for conducting the manufacture of these soaps, the heating is performed in a steam bath, and machinery and apparatus are employed for conducting the business with facility and economy.

Almond Soap.—This is perfumed with 2 lbs. of the otto of almonds added to 128 lbs. of dissolved bar soap. The heat should be as low as possible.

Camphor Soap.—This is made by adding 1 1-4 lbs. of otto of rosemary and the same amount of otto of camphor to 28 lbs. of dissolved bar soap.

Brown Windsor Soap.—This soap has a distinguished reputation, and sells at retail for 25 cents per pound. It is made by adding half a pound each of otto of caraway, cloves, thyme, cassia, and lavender to 168 lbs. of dissolved bar soap. Its brown color is produced by roasted sugar—caramel.

Perfumed soaps of endless variety can be produced, according to the perfumes employed to give them their peculiar odor. Some of the fragrance, however, is always lost by adding the volatile perfumes warm; therefore another method to produce scented soaps is to add the odoriferous ingredients cold. This is done by shaving bar soap in very thin slices, pounding them in a mortar with a very small quantity of cold soft water, adding the perfumes, and triturating well with the pestle. When well triturated, the soap is taken out and pressed into any desired form of cakes in molds, and then set to dry in a cool place.

A very fine fancy soap is thus made by adding to 6 lbs. of soap shavings, 8 ounces of oil of citron, half an ounce of verbena, 4 oz. of the oil of bergamot, and 2 oz. of the oil of lemons. This is an expensive, but excellent toilet soap.

Transparent soap is made by dissolving pure tallow or oil soap in alcohol, then allowing it to dry in a warm situation. The soap is added to the alcohol in fine shavings, and after being dissolved it is formed into cakes or balls, as may be desired. Any kind of perfume may also be added to transparent soaps in the alcohol.

Medicated Soaps.—Septimius Piesse has stated that he made a series of experiments with soaps, by medicating them with sulphur, iodine, bromine, creosote, &c. These substances were added to the soap while cold. He believes they might be of service in the treatment of some diseases, but does not speak of their effects positively. Sulphur combined with soap has been found very useful for skin diseases caused by insectoria. It is employed in the warm bath, and is found to be very effectual.

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New Inventions.

Improved Car Wheel.

The aim of the inventor, in this improvement, is the construction of a cast-iron car wheel that shall combine the following advantages: An equal rate of cooling and contraction in all parts by a judicious distribution and ventilation of the metal; sufficient provision for unequal shrinkage or strain; adequate continuous support of the rim; transverse or lateral stability effected by width of bearing of the connecting portion on the hub, and by the brace and counter brace character of the said portion; avoidance of liability to separate, either athwart the hub or between the latter and the connecting portion, or across the rim, or in other parts now subject to fracture; and, the attaintment of the requisite strength with the least possible weight of metal.

The wheels heretofore made may be ranged mainly under two heads, namely: those in which the hub and rim are connected by spokes, and those in which they are connected by plates; a few combine, to some extent, the advantages of both systems.

The spoke wheels generally are subject to transverse fractures of the rim, and also to the severance of the latter from the spokes near the place of junction. The disk wheels, on the other hand, although at present extensively adopted, are not free from radical defects.—The want of an adequate lateral brace and the divergent action of the disks in settling, tend to strain the two ends of the hub apart, and cause it frequently to fracture at right angles to the axis during the process of boring, or afterward, when in use. Another difficulty attending the disk wheels arises from the practical impossibility of perfectly centering the cores, and the consequent inequality of thickness of the plates, so that they have to be run very heavy, amounting to several thousand pounds superfluous weight in a single train.

Another practical objection in casting the disk wheels arises from the difficulty of providing a sufficient vent for any moisture remaining in or about the core, and, as a consequence, a more or less porous formation of the disks, making them treacherous objects of dependence. They are also liable from the much longer retention of heat about the center than at the outside, to be undergoing contraction at the center, while the parts toward the outside are expanding by crystallization, and the consequence is a weakness and liability to part either by the radial fracture across the hub, or by a concentric crack in the plate near the hub.

In the accompanying engravings, fig. 1 is a front view, and fig. 2 a transverse section. A is the hub and B the rim. The web or connecting portion of the wheel radiates from the hub in the form of a number of spokes or plates, C, whose depth or dimension parallel with the axis is the full length of the hub, or nearly so, so as to give abundant lateral stiffness to the wheel. From the hub, each plate projects nearly at right angles from the hub surface, whence, diverging alternately to the front and back of the wheel in an easy curve, it becomes rapidly thinner in the direction parallel with the axle, and thicker in the plane of the wheel, until, a little before it reaches the rim, it has expanded into a plate, D, which joining with that of the next alternate spoke on each side, becomes one of a pair of continuous flanges, E, one at each verge of the concavity of the wheel, thus forming two flanges, and presenting the main substance in the direction of revolution, which is where the strength is here wanted.

The curved form given to the web, as represented, enables the parts to accommodate themselves to any unequal shrinkage without the danger of fracture, while at the same time the peculiar form of the web operates both as a brace and counter-brace.

The form of the curve is also such as to present the connecting plates vertically, or nearly so, both to the hub and to the rim, which is the form best adapted to communicate the strain direct to the plate. The wheel, although at first sight it might seem otherwise, is very easily molded, the hollow space, *b*, between the flanges being formed by a single dry core in the shape of a ring, which is readily supported without the necessity for anchoring and the uncertainty attending the molding of the disk wheels, and this annular core is, with exception of the usual one for the axle, the only one required. There is also abundant ventilation for the core.

It should also be observed that the openings

IMPROVED CAR WHEEL.

Fig. 1

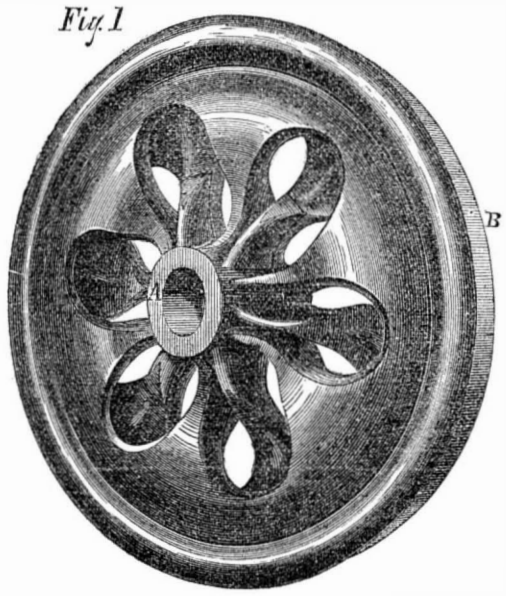
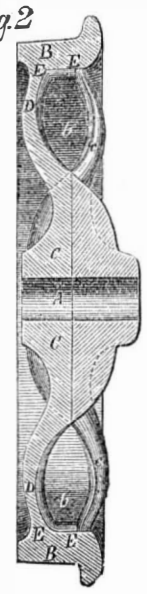


Fig. 2

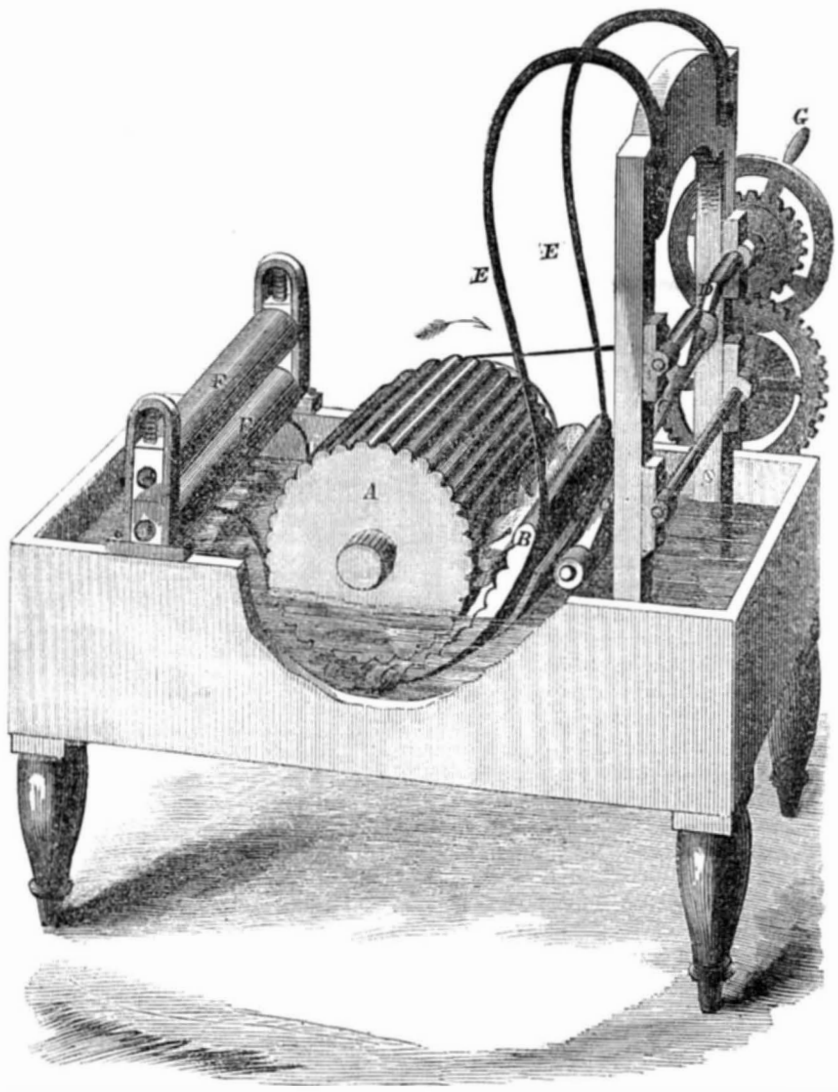


C, in one flange, come opposite the solid portions in the other one, so that any fracture would have either to pass through the wide part of one of the flanges, or to run obliquely across the tread of the wheel.

This improvement is one of simplicity, and is constructed upon scientific principles. It has been subjected to the most thorough practical tests, which have invariably proved its superiority.

The inventor is Mr. Z. H. Mann, No 454 8th st., Cincinnati, O., from whom further information can be had. Patented Oct. 4th, 1853. The wheels are manufactured extensively by Underhill, Greenleaf & Co., Indianopolis, Ind. and M. Felton & Co., Milbury, Mass.

IMPROVED WASHING MACHINE.



New Washing Machine.

In this improvement, the clothes to be washed are placed between the corrugated cylinder, A, and the curved corrugated board, B. This board is attached by a joint to the pitman, C, which connects with crank, D.—When D rotates, the board, B, receives an up and down motion, while the springs, E, press the board against cylinder, A, and thus the clothes are thoroughly rubbed between the corrugated surfaces. The action bears a close resemblance to hand work, and is evidently very effectual. In washing shirts, the body of the garment may be held back by hand, so as to give the collars and cuffs an extra rubbing, if necessary.

F F are wringing rollers, between which the clothes are passed after having been washed. These rollers may or may not be attached to the machine. The various parts are put in motion by belts or gearing, power being applied at G. This improvement is simple, and appears to be constructed on correct principles.

Invented by V. R. Stewart. Patented June 24, 1856. For further information address Close, Stewart & Co., Weedsport, N. Y.

Hon. Chas. Mason, Commissioner of Patents, Dr. Gale, Chemical Examiner, and other officers of the Patent Office, have gone into the country to rusticate for a short time.

A Railroad Hotel Car.

A car lately put on the Illinois Central Railroad contains six state rooms, each room having two seats with cushioned backs, large enough for a person to lie upon. The backs of the seats are hung with hinges at the upper edge, so that they may be turned up at pleasure, thus forming two single berths, one over the other, where persons may sleep with comfort. In one end of the car is a small wash room. On the opposite side of the car from the state-rooms is a row of seats with revolving backs, similar to barbers' chairs, so arranged that the occupant may sit straight or recline in an easy attitude, at pleasure. There are other cars on the same road which have each two or three similar state-rooms.

To this car there has but to be added the supplying of meals at moderate prices, at all hours, to make railroad traveling positively perfect. It would be a good plan on all railroad lines of more than one hundred miles long, to have a special car where refreshments could be obtained at reasonable prices. The houses of refreshment at railroad stations, where passengers are compelled to run "when the bell rings," to the great danger of their limbs, and the loss of many sixpences, ought to be swept away to make room for some better system, whatever that might be, and the best we can suggest is a special car for refreshments.

Scientific News and Illustrations.

There is one fact to which we would call attention, viz.: All the illustrations of American inventions which we publish are original, drawn and engraved specially for our paper. We never publish a cut that has previously appeared in this country. This, of course, involves us in great expense. But it enables us to present our readers with a continued succession of novelties which they can find no where else.

There is hardly a single invention of any importance, patented in the United States which is not, sooner or later, illustrated and described in our journal. Those who consult our pages have, therefore, reached the fountain head of information concerning the latest and best improvements. The largest portion of scientific and mechanical intelligence which circulates through the columns of the public press, daily and weekly, comes originally from the Scientifc American. It is copied from one paper into another, too often without proper credit for its source, until it becomes to be regarded as common property, and editors are unable to determine its chronology. Hardly a day passes but we are greeted, in the papers, with some re-hash of an old article on "very recent" discoveries, the original particulars of which appeared years ago in our journal.

If editors would take more pains to quote directly from the Scientifc American, instead of relying upon second-hand sources for their scientific paragraphs, they would keep their readers much better posted up.

Black, the Chemist.

The following is a description of Professor Black, the father of modern chemistry, and the discoverer of the latent heat of steam. It is taken from Lord Cockburn's Memorials—a work just published:—

"Dr. Joseph Black had, at one time, a house near us, to the west. He was a striking and beautiful person; tall, very thin, and cadaverously pale; his hair carefully powdered, though there was little of it except what was collected into a long thin queue; his eyes dark, clear, and large, like deep pools of pure water. He wore black speckless clothes, silk stockings, silver buckels, and either a slim green silk umbrella or a genteel brown cane. The general frame and air were feeble and slender. The wildest boy respected Black. No lad could be irreverent towards a man so pale, so gentle, so elegant, and so illustrious. So he glided like a spirit through our rather mischievous sportiveness unharmed. He died seated, with a bowl of milk on his knee, of which, on his ceasing to live, he did not spill a drop; a departure which it seemed, after the event happened, might have been foretold of this attenuated philosophical gentleman."

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Scientific American.

NEW-YORK, AUGUST 16, 1856.

THE SCIENTIFIC AMERICAN.—OPENING OF A NEW YEAR.

Comparative View of the Cost and Contents of Scientific Publications.

We are almost at the end of another twelve month's labors. Three more issues will complete the Eleventh Volume of the SCIENTIFIC AMERICAN, and bring us to the threshhold of a new year.

It would be pleasant, could we allow ourselves time, to stop here and indulge for a while in poetic reveries of the past, and hopeful dreams of the future. But we cannot do so. We must address ourselves at once to the *practical.*

We therefore commence by notifying our great host of friends, one and all, that the time for renewing their subscriptions has arrived, and we ask them to remit, at once, for the new term. Otherwise we must cross off their names from our books and cease to pay them our accustomed weekly visits.

We presume that none of them will wish to submit to an alternative so disagreeable. On the contrary, they will promptly respond to our wishes, as above expressed, besides doing whatever else they can to promote the great cause in which we are laboring, and in which they are equally interested, viz., the diffusion of useful knowledge.

We hazard nothing in saying that there is not a single reader of the SCIENTIFIC AMERICAN but feels that he has derived great pleasure and benefit from the pages of our journal during the year that has passed. He gladly wishes us increased success in the year now opening. He believes, with us, that the public good will be rapidly promoted by the general circulation of such publications as ours, and he is ready to lend us a helping hand whenever a practical opportunity occurs.

That opportunity, reader, is before you. You are about to renew your subscription. Will you not gladden our hearts, and contribute your mite to the general weal, by sending a new name along with your own? Will you not seek out some friend, show him our paper, explain its objects, and ask him to subscribe? How easy for each of our readers to influence a single accession to our ranks! If this is done by all, the number of our issues, instead of being 25,000 per week, would be 50,000, and our means of spreading scientific information, large as it now is, would be *doubled!* Friends, we earnestly call upon each of you to send us a new subscriber's name with your own!

When we compare the cost of our journal with that of other publications of a similar character, now issued in this land of cheap and rapid printing, we think we may justly lay claim to the public support. For $2 a year we furnish the subscriber with an amount of reading mater which, if printed with the large type now ordinarily used for books, would make *seventeen bound volumes of* 400 *pages each.* Books of this size are commonly sold at $1 per volume.

The Report of the Commissioner of Patents for 1854, consists of copies of the claims of patentees who obtained patents during that year. The Report is a large sized volume and contains nearly 800 pages. Those claims, word for word, officially reported at our own expense, were published in the SCIENTIFIC AMERICAN a long time prior to the appearance of the government report. They occupied but a small portion of our paper.

The *Franklin Journal* is the oldest publication of a scientific character, now existing in the United States. It is published once a month, and gives its readers, in each issue, 70 ordinary book pages, or 840 pages per annum. An important portion of its space is devoted to the printing of the Patent Claims. For $2 a-year the SCIENTIFIC AMERICAN gives its readers 2,200 pages of the same size, including the Patent reports. Considering the quantity of reading matter, our paper is about seven times cheaper than the *Franklin Journal.*

Silliman's American Journal of Science is published *once in two months*, at $5 a-year. Its aggregate contents are about the same as the *Franklin Joarnal*, so that in point of cost it is almost seven times dearer than the SCIENTIFIC AMERICAN.

We give these facts, not for the purpose of disparaging our cotemporaries, or glorifying our own labors, but merely to acquaint friends with what we are doing. They may see that in bestowing patronage upon us they are not giving it to idlers. We shall continue, as heretofore, to devote ourselves assiduously to the work of disseminating useful and truthful knowledge pertaining to the subjects which come within our peculiar scope. Further than this we have no pledges to make.

By reference to our Prospectus on the last page, it will be seen that we offer the large sum of *One Thousand Dollars* in cash prizes for the twelve largest lists of subscribers.

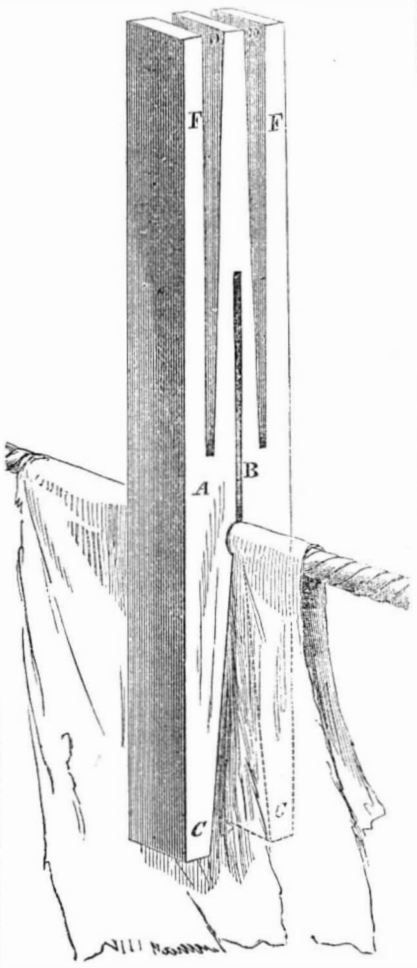
Recent American Patents.

Hub Mortising Machine.—By Thomas R. Bailey, of Lockport, N. Y.—Consists in the employment of a rotating and vibrating mandrel, to which the cutter is attached, said mandrel being arranged and operated in such a manner as to enter the shaft and cut laterally.

By this improvement the mortices are made in dovetail form and cut with great rapidity. The machine is simple, not liable to get out of repair, may be cheaply constructed, &c. The dovetail shape permits the spokes to be wedged in with great firmness.

Improved Clothes Clamp.—By William H. Towers, of Philadelphia, Pennsylvania.—This clothes clamp may be made of the rectangular form represented, or round, after the manner of the ordinary clothes pin. It has a concave groove, A, for enabling the elastic pressure of the clamping jaws, C, to be exerted above and below, as well as at the extreme sides of the line, and thereby cause the clothes to be impinged more firmly around the line, than if the sides of the slit were plain, and prevent the clamp being disengaged from the clothes and line by the action of the wind or other cause.

The upper slits, D, extend from the upper end of the clamp to near the center of the same, their lower ends being situated about midway between the lower center slit, B, and the outside of the clamp, so as to leave a sufficient body of material between the three slits to give the proper degree of elasticity to the lower clamping jaws, C.

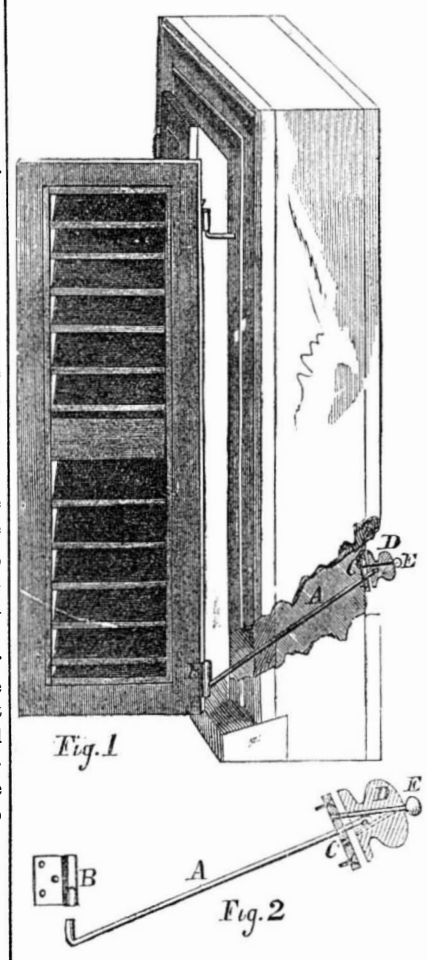


In securing clothes to the line, the lower jaws are extended to their fullest extent, by pressing the prongs, F, together, and the jaws, C C, opened, and placed over the clothes, the groove, A, being allowed to spring upon and press the clothes against the corresponding rounded sides of the line. In detaching the clamp the prongs, F, are pressed together in like manner, so as to clear the grooved jaws, C, from contact with the clothes.

Instead of forming two slits, as above, one only may be made if preferable, immediately above the lower slit of the clamping jaws.

Address Thos. W. Williams, No. 39 South 4th street, Philadelphia, Pa., for further information. Patented Feb. 12, 1856.

Improved Window Blind Opener.—By Hiram Collins, of Salisbury, Mass.—This is a contrivance for opening and closing outside blinds from the interior of the apartment, without opening the window. Every one knows how inconvenient it is, especially during a storm, to raise the window and reach out to open or close the blinds, to say nothing of the danger of falling when leaning over the sill.



The above improvement consists of a small rod, A, which passes through the window frame in a downward oblique direction, its lower end bent into hook form, and fitted into the barrel of the blind hinge. Fig. 2 shows rod A enlarged, and detached from the hinge, B. C is a plate secured to the window frame, through which rod A passes. Rod A is furnished on the inside of the frame, with an ornamental button, D, by which the blind is operated. The blind will swing either way, according to the direction in which button D is turned. E is a small pin for fastening the blind in any desired position; the pin passes through button D, into holes in plate C, and thus prevents D from revolving. By withdrawing pin E, the blind may be set to any desired position, and then secured by again inserting the pin. When desirable, pin E may be permanently attached to the under side of D, and the latter made to slide a little, so as to permit the pin to withdraw, or catch in plate C.

Nothing can be more simple or cheaper than this contrivance. It can be readily attached to all window blinds at a very trifling expense. There is nothing about it that is likely to get out of order. Once applied it will last as long as the window. The blinds may be taken off and put on, without unscrewing or unfastening anything. The inside buttons may be made in the form of curtain hooks if desired, or of any ornamental design.

For further information address the inventor as above. Patented June 11, 1856.

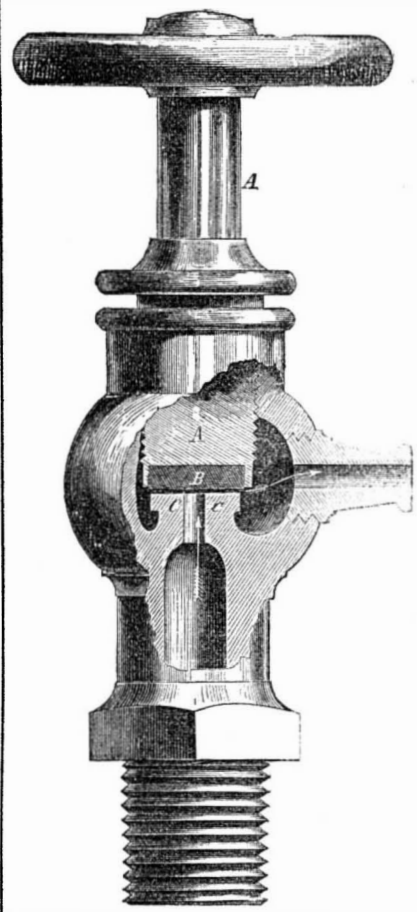
Straw Cutter.—By J. H. Gooch, of Oxford, Granville Co., N. C.—Consists in providing a support on the knife axle, and having the knife axle stationary, and the knife revolve on the same, so that the outer or short end of the straw may be supported during the cutting operation, and consequently a clean and sure cut be produced.

Fishing Rod Reel.—By John A. Bailey, assigned to J. A. Warrin, of New York City.—Consists in causing the crank shaft to slide laterally so that it will be kept out of gear with the reel. If, however, the crank shaft is pressed inward it will be instantly thrown in gear with the reel. By this arrangement the reel, when the line is thrown out, has no friction to overcome except that occasioned by the rotation of its own shaft or journals, and the line consequently may be thrown outward much further than where the usual reels are employed.

Carpenter's Lathe.—The patent for Carpenter's Improved Turning Lathe, illustrated in the SCIENTIFIC AMERICAN of May 17 (No. 36) of which Mr. Charles Barnum was the assignee, has been sold to J. Milnor Peck & Co., of Flushing, L. I., to whom all communications in reference to it should be addressed in future.

Improvement in Steam Gauge Cocks—By Albert Bisbee, No. 91 State street, Boston, Mass.—The object of this invention is to prevent leakage, and avoid the expense and labor of grinding the valve into its seat. This is done by providing the lower part of the valve, A, with an india rubber or elastic packing, B, which completely covers the valve seat, C.—The valve seat, C, is raised somewhat from the adjoining parts, and the packing is made of precisely the same diameter. The face of the valve seat is turned off perfectly smooth. The valve, A, screws down in the usual manner, and presses the packing, B, upon the seat, C, with great force. The nature of the packing is such as to render leakage impossible. The steam enters and escapes in direction of the arrows. The packing will last for a very long time; should it require removal it may be easily done.

The common gauge cocks are often leaky, even when new. By use they wear and become worse, requiring to be reground, which is a difficult job. No such objection exists in the above improvement, while the cost of manufacture is materially lessened, durability increased, &c. Patented September 18, 1855. Address the inventor for further information.



Improvement in Printing Presses.—By R M. Hoe, of New York City.—This improvement consists in novel means of securing the types to revolving cylinders, and also in a new method of locking up the "turtles," or "forms" in which the types are placed. Draw-

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ings would be necessary to explain the parts. The patentee is well known as the inventor of the mammoth type revolving steam printing presses, now used in all of the most prominent newspaper establishments of this country. These presses print from 10,000 to 20,000 sheets per hour, according to size.

Improvement in Iron Shutters.—By L. B Fagan, of New York City.—This invention relates to rolling or folding shutters.—It consists in having the slats of the shutter curved in a peculiar manner, and the slats connected by hinges, so that a durable fire and burglar proof shutter is obtained.

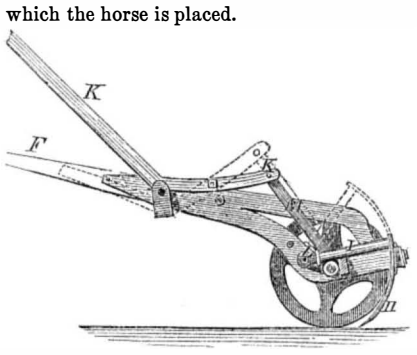
A represents the slats of the shutter connected by hinges, B, which are secured to the backs of the slats.

The upper edges of the slats are curved, as shown at *a*, and the lower edges may also be curved if desired, as shown at *b*. The upper curved edge, *a*, of one slat bears against the lower edge of the slat above, and if the lower edges of the slats are curved, the curved parts, *b*, fit underneath the curves, *a*, of the slats below.

The curved parts, *a b*, of the slots form perfect bearings, so that the slats cannot become worn or injured by abrasion, and the slats are allowed to turn or roll up readily, and form tight and perfect joints, both fire and burglar proof. This invention renders the shutter very strong, permits a much lighter and thinner species of metal to be used, thus reducing the expense of manufacture, presents a very ornamental appearance when finished, etc. For further information apply to the inventor, 108 Church street, New York City. Patent applied for.

English Patents.

Smith's Improved Horse Rake.—This invention is intended for hay raking we suppose, but the description does not inform us. It is a two-wheeled vehicle, F being the shafts in which the horse is placed.



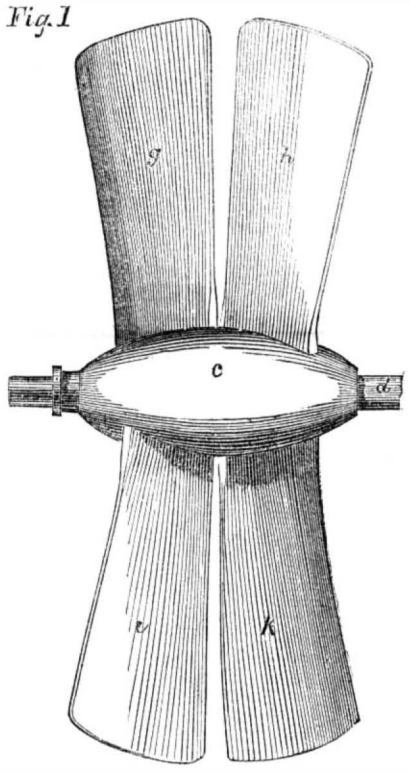
H are the raker teeth, made in curved form and attached to arms, I, which are pivoted at L. M is a connection rod which unites arms, I, with lever, K. By pressing down lever, K, the rake arms, I, with the rake will be elevated, and *vice versa*. A pin may be used at any convenient point to fasten K down, and keep the rake elevated, when desired.

Lowe's Improved Propeller.—This invention relates to improvements in screw propellers worked at or near the stern of the vessel.—These propellers usually consist of two or more wide vanes or blades, mounted on, or attached to a boss, which is keyed on to the propeller shaft.

The first part of the invention consists in dividing the blade of screw propellers into two or more parts, and placing them in pairs or sets, in or near a line which passes diagonally across the boss. By thus dividing the blade into parts, the second half of the blade is made to act more effectually than heretofore, and the choking action incidental to ordinary stern propellers is obviated, as a portion of the water that has been acted on by the first section of the blade is allowed to escape between the first and second sections, and the latter will then be able to act with greater effect on the water.

The second part of the improvement relates to the form of the blade. When pairs of blades (that is, two sets of blades) are used, the first one of the pair is to be made slightly convex, or bowed, with the front edges chamfered off, so that it may enter the water more quickly than if left square. The second blade is, on the contrary, made slightly concave in the direction of its length, so that when the water slips from the first blade of a pair on to the second, the latter will act more effectually than if it were straight or flat, or made convex like its fellow. Three or more blades may be used in a set, and two, three, or four sets may be adapted to the same boss, which it is intended to make of an elliptical shape. The patentee describes in his specification the method of forming the blades, so as to give them the correct shape. By constructing a blade in the proposed manner, the angle on the face of the blade is made to vary gradually between the outer edges and periphery.

Fig. 1



The patentee next describes how the blades are placed upon the boss, and also shows the position in which they stand with respect to each other when fixed, so as to produce the greatest amount of useful effect when in operation

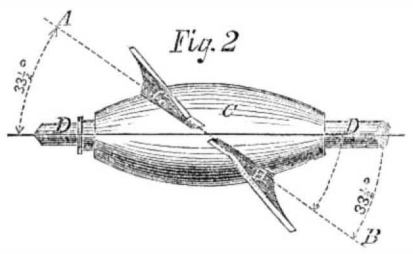


Fig. 1 is a side elevation, showing a propeller of this construction applied to the stern of a vessel. Fig. 2 is a plan of a propeller having two pairs of blades. In proceeding to fix these propellers upon their boss, a line, A B, is drawn diagonally upon the surface of the boss, C, at angle of about thirty-three degrees with the axis of the propeller shaft, D. Upon this line, A B, at a suitable distance on either side of a center cross line, the positions are marked upon the boss where the respective blades, G H or I K, are to be placed, the center line of the plane of the base of each blade coinciding with the diagonal line, A B. When three pairs of blades are used, three diagonal lines are drawn upon the boss, and the positions of the blades are determined in a manner analogous to that above explained.

Hostage and Tatlock's Improved Railway Chair.—The primary object of this invention is for joint bearings and fastenings, but it is stated to be equally applicable for intermediates. The patentees state that in the method of finishing—although a good and secure joint is made in the first instance—the constant wear and vibration of the traffic cause an enlargement in the holes in a few years, which necessitates redrilling the rails and side plates, new bolts, &c.

Fig. 1

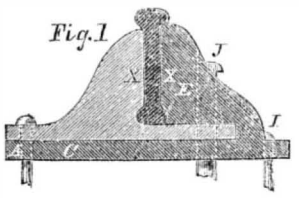


Fig. 2

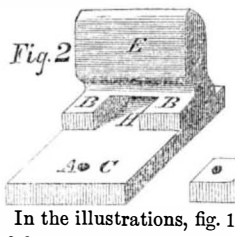
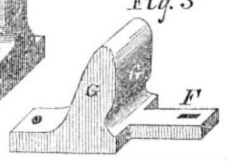


Fig. 3



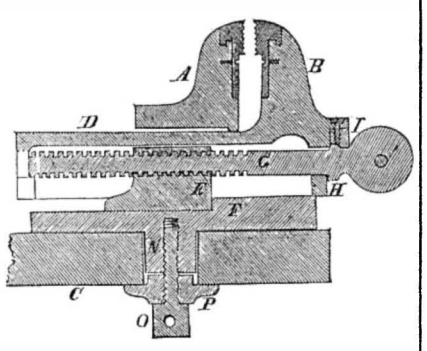
In the illustrations, fig. 1 shows an elevation of the chair when fixed; the dotted lines show the slide tongue and cotter. Fig. 2 shows a perspective view of the chair with slide withdrawn so as to admit of the rail being taken up or placed down; and fig. 3 shows a view of the slide and tongue part of the chair.

The fixed chair, fig. 2, is cast with a seat for the rail, and cheek or solid abutment to fit the outside. In laying, this is fastened to the sleeper, in the first instance, by a spike passing through a hole, A. The immediate seat of the rail, B B, fig. 2, is elevated about an inch above the top of the lower plate of the chair, C. There is a space or opening, H, in the center of this plate, which extends under the fixed cheek, F, for the admission of the tongue, F, fig. 3, in the other part of the chair, which space is about two inches wide by one inch deep.

The movable portion of the chair, fig. 3, is also formed with a cheek, G, to fit the rail, and furnished with a projecting tongue, F, to fit the space, H, described in the other portion of the chair, which extends so far beyond the outside of the cheek in the fixed part, as to admit a wedge, J, of wrought-iron, to be driven down vertically through a slot both in the tongue and bottom of the chair, and some distance into the wooden sleeper; the position of the two slot holes being such as to allow the wedge to draw the whole up tight. The usual spike, I, fig. 1, then secures the slide and bottom plate to the sleeper in the ordinary manner. A thin piece of felt at X X, fig.1, will amply remedy any slight inequalities in the frame-work.

Warren's Improved Vise.—This invention consists in constructing vises so as to simplify them and render them more convenient for use than those of the ordinary construction.

The illustration represents a vertical section. A is the fixed jaw; and B the movable jaw. Jaw A is fixed to the bench, C. D is a guide bar, connected with the movable jaw, B;



it passes through a groove or slot in the fixed jaw, A, and is made hollow, and in its motion slides over the screw box, E, fixed in the bed plate, F, the said bed plate being made in one piece with the fixed jaw, A; G is the screw by which the motion of the jaw, B, is produced. The screw, G, is situated nearly in the axis of the hollow guide bar, D. When the screw, G, is turned, it advances in or retires from the screw box, E; as it advances in the screw box, the shoulder, H, bearing against the front jaw, B, brings it towards the fixed jaw, A; and as the screw, G, is withdrawn from the screw box, E, the movable jaw, B, is made to recede from the fixed jaw A. The opening of the vise, on the withdrawal of screw G from the screw box, E, is effected by the semicircular hollow collar, I, which passes over the neck of the screw and bearing against the shoulder, H, of the screw. The screw box, E, is fixed in the plate, F, by means of a dovetail. N is a boss or projection on the under side of F, and enters a hole in the bench, C. O is a screw which engages in the boss, N; P is a washer, through which the screw O passes, and against the under side of which the head of the screw bears. By loosening the screw, O, the vise may be turned upon the boss, N, as a center, and made to take any position in the plane of its motion. By tightening the screw, O, the vise may be fixed to the bench, C, in any desired position. —[*London Engineer.*

Maryland Institute for Promoting the Mechanic Arts.

The Eighth Annual Report—just published—of the above Institution gives evidence of its progress and prosperity. Its income for the past year was $13,333 84; its expenditures $13,237 85. It is by far the strongest Mechanics Association in the United States, and is an honor to the people of Baltimore. The amount received for fees from new members, and dues from old members for the year amounted to no less than $6,200 50. It has 2,997 paying male members and 94 lady members, and 270 life and honorary members, making a total of 3,361.

It has an educational department connected with it, for giving chemical lectures; also a School of Design, which has been very successful, and we commend this feature of its policy to every institution of the kind. Two hundred and fifty pupils attended the course of instructions last winter. Geometry, architecture, mechanics, drawing, lithography, oil painting, engraving, and the German language are taught. There is both a male and female department, the latter numbering 65 pupils

Its Hall is the noblest mechanic's building now in the land, but may be surpassed by the one now in course of construction by the mechanics of Worcester, Mass. Its last Fair was the best Industrial Exhibition ever held in Baltimore. Its nett profits amounted to $2,970. We feel not a little proud of such an institution as that of the mechanics of Baltimore.

United States Agricultural Society.

This national Agricultural institution will hold its next Exhibition in the city of Philadelphia, in the second week of October next, commencing on the 7th. No less than $14,000 are offered as premiums. The object of this Society appears to be principally, the improvement of the breeds of domestic animals, as no prizes are offered for special agricultural implements, and only $250 altogether ($775 less than for stallion prizes) to those who exhibit collections of implements. Not much encouragement is held out to inventors; a most mistaken policy on the part of the officers of the society, whose programme of exercises loom largely with "Grand Cavalcades of Horses."

Good Ink.

We have lately had occasion to try some of Mr. A. Harrison's writing inks of different colors. Those who desire to supply themselves with a good article will do well to give him an order. Direct to No. 10 South 7th street, Philadelphia.

Oriental Railroad.

Mr. Layard proposes that a railroad should be built from the Mediterranean through Aleppo to Mosul, on the Tigris, thence down the eastern bank of that river through Bagdad to the Persian Gulf. A railroad has also been suggested, through the deserts of Syria and Arabia to the Gulf, following closely the route of the caravans that from time immemoria have carried the rich products of the East to Aleppo. It is expected that English capitalists will engage in building these railroads.

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TO CORRESPONDENTS.

H. P. T., of Mass.—Placing small mirrors inside of gentlemen's hats is a very old device, and in common use.

H. C. G., of Ill.—Whether your proposed watering machine would be practicable depends on its construction. You do not describe it.

C. H. S., of N. Y.—The making of a paving or building material by filling a mold with small stones and then pouring in melted iron is quite old, and not patentable.

M. M., of Pa.– Expanding reamers are quite old; we do not think there is any chance for obtaining a patent on your device.

J. B. U. Jr., of N. H.—You invention for reefing jibs and all triangular sails appears to be a novel contrivance and we should think it patentable. We cannot satisfac torily reply to your enquiry as to whether it is worth patenting or not. Such questions are often proposed to us, but it would require prophetic knowledge to determine them. We can only say in general, that a new and useful improvement is worth the trifling expense of a patent.

E. T. L., of Va.—We would infer that a daguerreotype of the moon placed under a microscope would reveal the most minute objects on its surface, but this has been done under a powerful instrument without satisfactory results. The daguerreotype was large—six inches in diameter.

G. B. C., of N. Y.—We shall await further instructions in regard to your case.

L. W. B., of Mass.—It will be a very difficult matter to remove the incrustation from your water pipe. A dilute acid can do it, but how can you apply it? It is our opinion that you will have to lift the pipes and lay in a new set.

J. R. M., of Me.—Air cushions and air beds for marine purposes are well known. A patent could not be obtained for them. We hope your Inventors's Club will be successful. It has been found difficult to maintain such an organization for any length of time.

J. W., of N. Y.—The rotary engine described in your letter does not contain the slightest novelty. It is one of the oldest inventions of the kind.

J. W., of C. W.—We do not know what the Canada Postmasters are allowed to charge upon newspapers sent from the States. We must refer you to the Canadian postage laws for an answer to this enquiry. The Smithsonian Institute is not located in Boston. Address Prof. Henry, Washington, D. C. By obtaining Morfitt's work on Soaps and Candles, published by Parry and McMillen, Philadelphia, you will learn how to treat hog's lard. You can procure gutta percha articles of the North American Gutta Percha Co., No. 102 Broadway, N. Y. For such particulars as you need please address them.

H. G. Jr., of N. Y.—It would be out of the question to procure the aid of any one to the amount of $25,000 or $30,000 for the purpose of experimenting on a steam plow, notwithstanding the assurance that your proposed plan is perfectly feasible. We cannot encourage you to hope for any such assistance.

H. H., of L. I.—Go ahead with your perpetual motion.

J. B. W., of N. J.—You can do as you think best in re gard to your composition.

G. McC., of New Brunswick.—Your enquiries in regard to the proposed Fair of the American Institute have been submitted to the Secretary for his attention. A mere de scription of the virtues of your lock does not enable us to pronounce an opinion in regard to its novelty. You should either send us a specimen or a sketch and description of it for examination. A British subject is required to pay $500 on making an application for a patent.

A. D. C., of Boston.—If you will send us an intelligibie sketch and description of your shoe pegging machine, together with your proper address, we will answer your enquiry by mail.

D. L. B., of Ky.—The steam engine you describe as a substitute for the common reciprocating kind in general use, is nothing more nor less than a rotary, well known to all who are familiar with the history of the steam engine. It would neither be wise nor useful to employ such an engine, as it has long since passed into condemnation.

Chas. R. Brown, of Hebron, Wis., wishes to purchase the best apparatus for heating a work-shop 72 x 22 feet, and 2 stories high with hot air, using maple chips for fuel. Who will give him the information?

M B. De, of Ill.—There is no work with which we are acquainted on molding in Plaster of Paris.

J. G. of Va.—Pipe for making drains on farms, are made in the manner described by you. No patent could be obtained by you.

H. G., of Canada.—A law for permitting the people of other countries to take out patents in this country on the same terms as our own citizens is now before Congress, ut has not yet passed. The bill is only applicable to the people of those countries where Americans are allowed to take patents on the same terms as the citizens thereof. In Canada patents are refused to our people altogether. Consequently, until Canada amends her law, the proposed reciprocity bill would be of no advantage to Canadians.

Money received at the SCIENTIFIC AMERICAN Office on account of Patent Office business for the week ending Saturday, Aug. 9, 1856:—

D. A. D., of Fla., $5; G. & H., of N. Y., $10; W. S., of O., $25; O. H. P., of O., $27; F. N., of L. I., $10; H. B., of N. Y., $55; H. R. R., of N. Y., $30; F. A. H., of S. C., $50; S. B. P., of N. Y., $30; T. J. C., of N. Y., $35; T. C. C., of N. Y., $30; N. & P., of Mass., $25; A. M. P., of Miss., $40; G. H. G., of Miss., $25; S. B. F., of Mass., $25; G. D., of N. Y., $250; B. G. N., of Wis., $30; D. M. & & Co., of Pa., $30; A. B., of Mass., $27; D. N., of N. Y., $30; R. B., of N. Y., $30; W. S., of R. I., $30; B. W., of Mich., $30; J. G., of N. Y., $30; A. H. C., of N. Y., $25; J. A. H., of Ind., $55; A. P., of N. J., $30; L. B. F., of N. Y., $30; S. A., of Tenn., $35; G. K., of N. H., $30; D. N. D., of Mass., $35; W. M. B., of Ind., $20; W. B., of Md., $20; O. O. W., of N. Y., $30; J. M., of Pa., $30; M. & Co., of Conn., $25; T. W. C., of N. Y., $25; I. F. B., of Ga., $25; G. K. & E., of Ill., $40; A. Van P., of Wis., $27; J. P.. of N. Y., $55; G. H. T., of Mass., $90; G. W. B., of L. I., $550; H. A., of N. Y., $25; J. B., of N. Y., $25.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, August 9:—

D. A. D., of Fla.; W. S., of O.; O. H. P., of O.; F. N., of L. I.; G. W. B., of L. I., (2 cases); N. & P., of Mass.; T. C. C., of N. Y.; S. B. F., of Mass.; A. B., of Mass.: N. A., of N. Y.; G. H. G., of Miss.; H. A., of N. Y; H. B., of N. Y.; J. B., of N. Y.; A. H. C., of N. Y.; W. M. B., of Ind.; A. Van P., of Wis.; T. W. C., of N. Y.; M. & Co., of Conn.; P. E. P., of France.

Important Items.

NEW EDITIO OF THE PATENT LAWS.—We have delayed for some months the issue of another edition of the present Patent Laws in the expectation that Congress would most certainly at this Session, make some simple amendments to them—such as are earnestly sought for by inventors and patentees. As there is now little hope that any such changes will be made during the session, we have issued a complete edition of the laws, including the regulations of the Patent Office—copies of which can be had for 12 1-2 cents each. If any of our readers, who have ordered the laws and regulations, and have not received them, they will be promptly supplied upon renewing their requests by letter.

MODELS—We shall esteem it a great favor if inventors will always attach their names to such models as they send us. It will save us much trouble, and prevent the liability of their being mislaid.

Literary Notices.

LIFE OF WASHINGTON, By Washington Irving,—To no individual could the task of portraying the character and career of the immortal Washington have more appropriately fallen than to Washington Irving. A fervent patriot, of peerless genius and brilliant achievements, he is the Washington of all his literary cotemporaries. The first volume, which we have received, although necessarily dry in its materials, as all biographies of the earlier years of the subject generally are, is nevertheless deeply interesting. The genial perspicuity and fascinating style of narration—so peculiar to Irving—pervade every page. Messrs. G. P. Putman, N. Y., are the publishers. They are entitled to great credit for having produced a cheap edition. $1 per volume.

BLACKWOOD'S MAGAZINE—The last number of Old Ebony is rich. The Athelings is continued—an interesting story—so is Travels in Circassia, and the Scot Abroad, which gives an account of Law—perhaps a progenitor of Live Oak George—who from a silversmith arose to be a mighty ruler in France, and bamboozled the whole French Court. Published by Leonard Scott & Co. No. 54 Gold st., this city.

THE KNICKERBOCKER—This Magazine for the present month affords a rich treat for the literary epicure, who, retiring to a shady nook, fanned by the fragrant gales, delights to quaff sparkling draughts of intellectual nectar. Published by S. Hueston, No. 348 Broadway, N. Y.

APPLETON'S RAILWAY AND STEAM NAVIGATION GUIDE for August, has made its appearance. It is a complete synopsis of travel by land and sea. Appleton & Co., 364 Broadway, N. Y.

HALL'S JOURNAL OF HEALTH—This is a very spicy and vigorous journal, full of sound common sense. The Editor would throw the bulk of the physic to the dogs.—Dr. Hall, No. 42 Irving Place, N. Y.

UNITED STATES MAGAZINE—The number for August is splendidly illustrated. This work seems destined to take a high rank among the periodical literature of the country. Emerson & Co., N. Y. publishers.

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IMPORTANT TO INVENTORS.

THE UNDERSIGNED having had TEN years' practical experience in soliciting PATENTS in this and foreign countries, beg to give notice that they continue to offer their services to all who may desire to secure Patents at home or abroad.

Over *three thousand* Letters Patent have been issued, whose papers were prepared at this Office, and on an average *fifteen*, or *one-third* of all the Patents issued each week, are on cases which are prepared at our Agency.

An able corps of Engineers, Examiners, Draughtsmen, and Specification writers are in constant employment, which renders us able to prepare applications on the shortest notice, while the experience of a long practice, and facilities which few others possess, we are able to give the most correct counsels to inventors in regard to the patentability of inventions placed before us for examination.

Private consultations respecting the patentability of inventions are held free of charge, with inventors, at our office, from 9 A. M., until 4 P. M. Parties residing at a distance are informed that it is generally unnecessary for them to incur the expense of attending in person, as all the steps necessary to secure a patent can be arranged by letter. A rough sketch and description of the improvement should be first forwarded, which we will examine and give an opinion as to patentability, without charge. Models and fees can be sent with safety from any part of the country by express. In this respect New York is more accessible than any other city in our country.

Circulars of information will be sent free of postage to any one wishing to learn the preliminary steps towards making an application.

In addition to the advantages which the long experience and great success of our firm in obtaining patents present to inventors, they are informed that all inventions patented through our establishment, are noticed, *at the proper time*, in the SCIENTIFIC AMERICAN. This paper is read by not less than 100,000 persons every week, and enjoys a very wide spread and substantial influence.

Most of the patents obtained by Americans in foreign countries are secured through us; while it is well known that a very large proportion of all the patents applied for in the U. S., go through our agency.

MUNN & CO.
American and Foreign Patent Attornies, Principal Office 128 Fulton street, New York.

IRON ROLLING MILLS—I wish to obtain the address of some rolling mills which can make a band of iron 30 feet long, 5 inches wide, 1-32 of an inch thick, made of the toughest best kind of iron, to serve for an endless band for a belt saw on my patent marble sawin machine. Address, C. A. SCHULTZ,
1* Box 2215, Chicago, Ill

COOKING AND HEATING FOR THE MILlion—The most practical and useful invention of the present age. Important to Capitalists and Manufacturers. A rare chance to make a fortune. Demorest's Patent Magic Atmospheric Gas Stove has now been fully tested by scientific experiment, and by practical use in hundreds of families, and fully confirmed as just the article long needed by families, hotels, and restaurants, etc., for general cooking and heating purposes. The patent for this valuable invention having been secured, State, County, Town, and shop rights are now offered for sale on very liberal terms. The whole apparatus can be made in any tin shop. For a further description see page 341 this Vol. SCI. AM. Address W. J. DEMOREST,
1* No. 375 Broadway, New York.

PAGE'S PATENT CIRCULAR SAW MILLS with Steam Engine and Boiler, on hand and for sale for $1500, at Schenck Machine Depot, 163 Greenwich st. New York. A. L. ACKERMAN. 49 10

A YOUNG MAN about 21 years of age, wishes to find a place in the city or country where he can learn the machinist trade. Address A. BEAL,
49 2 No. 15 Center st. N. Y.

PREMIUMS FOR FIRE ENGINES—The large Gold Medal will be awarded for the best Steam Fire Engine, and for the best Fire Engine, to be operated by hand power, to be exhibited at the Fair of the American Institute this Fall. By order of the Managers.
49 2 WM. B. LEONARD, Agent.

TWENTY-EIGHTH ANNUAL FAIR OF THE American Institute of the city of New York at the Crystal Palace.—This magnificent and spacious building will be opened for the reception of Goods from Monday the 15th, until Saturday the 20th of September. Heavy goods and articles from a distance will be received and stored in the Palace on and after the 1st of September.—Premiums—consisting of Gold, Silver, and Bronze Medals, Diplomas, &c.—will be awarded on the recommendation of competent and impartial judges. The Cattle Show will be held on Hamilton Square, a beautiful plot of ground of ten acres, granted by the Corporation of the City of New York for that purpose, on Tuesday, Wednesday and Thursday, the 14th, 15th, and 16th days of October. The Managers would impress upon exhibitors the necessity of giving immediate notice of the space they wish to occupy, and those exhibiting machinery requiring power, the amount. From the numerous applications already made, the Managers find it necessary to make further provision for steam power. Communications addressed to Wm. B. Leonard, Corresponding Secretary, will meet with particular attention. Circulars containing full particulars can be had on application at the office of the American Institute, 351 Broadway, New York.
GEO. F. NESBITT, Chairman.
JOHN W. CHAMBERS, Secretary. 49 3

CIRCULAR SAW MILLS—The subscriber has on hand, and is constantly manufacturing those celebrated mills with saws from 30 to 80 inches diameter, adapted to manufacturing most kinds of lumber, and warranted to give satisfaction. For prices, &c., address W. HERRICK, Northampton, Mass. 49 8*

MACHINE BELTING, Steam Packing, Engine Hose.—The superiority of these articles manufactured of vulcanized rubber is established. Every belt will be warranted superior to leather, at one-third less price. The Steam Packing is made in every variety, and warranted to stand 300 degs. of heat. The hose never needs oiling, and is warranted to stand any required pressure; together with all varieties of rubber adapted to mechanical purposes. Directions, prices, &c., can be obtained by mail or otherwise, at our warehouse. New York Belting and Packing Co., JOHN H. CHEEVER, Treasurer, No. 6 Dey street, N. Y. 48 10*

SECOND HAND STEAM ENGINES FOR sale.—One of six and one of eight-horse power. In good order, and will be sold low. W. H. ADAMS,
48 2* 29th st. cor. 11th ave.

NOTICE—To Agricultural Societies and Manufacturers—G. & J. W. Gibbs, of Canton, Ohio, have invented a Dynamometer, the best yet brought before the American p ople for testing the draft of plows, mowers and reapers, &c. Those wishing to secure one of these valuable instruments for the coming trials this fall, should order early. Instruments warranted. Patent applied for. 48 3*

INGERSOLL'S IMPROVED PORTABLE Press for Hay, Cotton, Tobacco, &c.—A silver medal for which was awarded last fall at the Fair of the American Institute, and also at the Fairfield County Fair in Conn. On account of the cheapness, compactness, portability and great power it is exactly adapted to the wants and means of every farmer and planter, and is believed to be far superior in every respect to any other machines of the kind now manufactured. See SCI. AM. Vol. XI, No. 30. Circulars, cuts, &c., descriptive of the machine can be had on application to the Farmers and Mechanics Manufacturing Co., Green Point, (Brooklyn) L. I. 48 4*

WELTON, STEARNS & HOLMES—Artesian Engineers, Charleston, S. C., and Augusta, Ga. A. C. WELTON, I. H. STEARNS, C. B. HOLMES.
48 3*

FOR SALE—9 Volumes of the Scientific American, 2 to 10 inclusive, complete and well bound. Address J. V. HAYNES, West Meriden, Conn. 48 2*

VANFLEET'S PLANING MACHINE—Important to Builders, Dealers in Lumber, Car Manufacturers, &c.—This machine does not take half the power that the Woodworth Planer does, and is applicable and practicable for horse power. For rights and machines address. D. C. HENDERSON, Sandusky, O. 48 4*

1000 YOUNG MEN for big wages. Honest, easy, and sure. Send stamp to Box 533, Detroit, Mich. 48 2*

50 STEAM ENGINES—From 3 to 40-horse power also portable engines and boilers; they are first class engines, and will be sold cheap for cash. WM BURDON, 102 Front st., Brooklyn. 41 tf

GOLD QUARTZ MILLS of the most improved construction; will crush more quartz and do it finer than any machine now in use, and costs much less. WM BURDON, 102 Front st., Brooklyn. 41 tf

REED'S PATENT CHRONOMETER ENGINE. This is an improved Steam Engine for which Letters Patent were granted to John A. Reed, of New York, Jan. 9, 1855. The nature of this improvement consists in the increase of power about 20 per cent., and reducing the weight of the engine one half. The saving of fuel is effected by letting the steam in on both sides of the cylinder; doubling the size of the port, and balancing the pressure, removing the friction and weight of the slide valves, eccentrics, cross heads, connecting rods, &c. The exceeding simplicity of this engine renders it much more durable and easily managed than any other, and when placed upon the boiler with wheels it is portable though effective. These engines received the First Prize Medal at the Great Exhibition in Paris. There are about seventy-five of them now in oparation, all giving great satisfaction.

1-horse Engine -	$150.	Boilers and fittings	$125.
3 " " - - -	200.	" " -	150.
6 " " - - -	300.	" " - -	300.
8 " " - - -	400.	" " - -	400.
10 " " - - -	500.	" " - -	500.

All sizes from 1 to 100-horse power at the shortest notice. Also Reed's Patent Steam Pump, the simplest and most durable one in use, for raising water or supplying boilers. Further information may be had by addressing TOUSLEY & REED, 95 Maiden Lane, New York. 24 lamtf.

WEISSENBORN'S PATENT INCRUSTATION Preventer.—Among the testimonials to the great success of this invention, read the following from William Burdon, 102 Front st., Brooklyn:—"I am perfectly satisfied with its operation. I believe it is the only machine yet invented that will entirely separate lime and other impurities from the water, when using hard water." In addition to this, it is the best water-heater, and a superior condenser. All parties are warned against infringements on the patent. STEWART KERR, Agent,
47 5eow 17 Broadway, New York.

H. WELLS & CO., Florence, Hampshire Co., Mass.—Are at all times prepared to fill orders for any size (single or double) of Wells's Patent (Improved) premium Circular Saw Mills, which take the lead of all other mills in market for manufacturing lumber. Also Morrison's Shingle Machines, which rive, shave, and joint perfectly, 60 shingles per minute.—Self-Setting, Shingle, and Lath Sawing machines, capable of sawing 1000 shingles per hour, or 4000 lath per day. Cuts, and List of Prices sent by mail when desired. 45 6teow

KENTUCKY MECHANIC'S INSTITUTE—The Fourth Annual Exhibition will commence, in Louisville, on Sept. 30th. 1856. Gold silver, and bronze medals, and diplomas will be awarded for superior articles, and special premiums for the most meritorious.—Competition is invited from every part of the Union. The Hall will be ready for the reception of goods on Sept. 18. Articles for exhibition only admitted free of charge.—Goods must be carefully packed and directed "Kentucky Mechanic's Institute, care of Carter and Jewett, Louisville, Ky." Persons applying for space or desiring further information, will address D. McPHERSON, Secretary of the Exhibition Committee. 45 4*eow

PORTABLE STEAM ENGINES.—S. C. HILLS, No. 12 Platt st., N. Y., offers for sale these Engines, with Boilers, Pumps, Heaters, etc., all complete, and very compact, from 2 to 10 horse power, suitable for printers, carpenters, farmers, planters, &c. A 2 1-2 horse can be seen in store, it occupies a space 5 by 3 feet, weighs 500 lbs., price $240; other sizes in proportion. 27 e3w

CIRCULAR SAWS—We respectfully call the attention of manufacturers of lumber to the great improvements recently introduced in the manufacture of our Circular Saws. Being sole proprietors of Southwell's patent for grinding saws, we are enabled to grind circular saws from six inches to six feet with the greatest accuracy and precision. The impossibility of grinding a saw without leaving it uneven in thickness has always been acknowledged by practical saw makers. This causes the saw to expand as soon as it becomes slightly heated in working. When this takes place the saw loses its stiffness, and will not cut in a direct line. We will warrant our saws to be free from these defects; they are made perfectly even in thickness, or gradually increase in thickness from the edge to the center, as may be desired. As there are no thick or thin places. the friction on the surface of the saw is uniform, consequently it will remain stiff and true, and will require less set and less power. Will saw smooth, save lumber, and will not be liable to become untrue. This is the oldest etablishment now in existence for the manufacture of circular saws in the United States, having been established in the year 1830. Orders received at our Warehouse, No. 48 Congress st., Boston.
44 13 * WELCH & GRIFFITHS.

KNITTING MACHINES—Circular and straight knitting machines of all sizes and gauges on hand and made to order. WALTER AIKEN, Franklin, N.H.
46 8*

PAGE'S PATENT PERPETUAL LIME KILN, will burn 100 barrels of lime with three cords of wood every 24 hours; likewise my coal kiln will burn 150 bushel with 1 tuh bituminous coal in the same time; coal is not mixed with limestone. Rights for sale.
45 26 C. D. PAGE, Rochester, N. Y.

NORRIS WORKS, Norristown, Pa.—Inglis, Carson & West, Iron and Brass Founders, Machinists, Boiler Makers and Steam Engine Builders—Manufacture Cornish Pumping Engines of an improved construction for mines and Water works, of any capacity. All kinds of Mining Machinery, Sugar Mills, Propeller Engines for Canal Boats, Blowing Cylinders, and all heavy machinery required in the Engineering business generally.
ANDREW INGLIS,
RICHARD R. CORSON,
43tf JOHN WEST.

LAWRENCE SCIENTIFIC SCHOOL—Harvard University, Cambridge, Mass. The next term will open on Thursday, Aug. 28th. For catalogue containing full particulars address E. W. HORSFORD, Dean of the Faculty. 42 8

BARREL MACHINERY—CROZIER'S PATENT is unrivalled in point of quality and quantity of work performed, and may be seen in constant operation at the Barrel Manufactory of the undersigned. For rights and machines address WELCH & CROZIER,
43 18* Oswego, N. Y.

TO CAR BUILDERS—For Sale, one new Upright Boring Mill for boring car wheels. Maker's price $600, will be sold for $300 cash. Address GEO. S. LINCOLN & CO., Hartford, Ct. 43tf

FOR SALE—One second-hand 7 ft. power Planing Machine, made by the New Haven Manufacturing Co. Cost $500, will be sold for $300 cash. Has been used only about four months. Also an upright drill by the same makers. Cost $90, will be sold or $40 cash. Address GEORGE S. LINCOLN & CO.,
47 tf Hartford, Conn.

BOILER FLUES—All sizes and any length promptly furnished by JAMES O. MORSE & CO., No. 79 John st., N. Y. 37 3mos

WROUGHT-IRON PIPE—Plain, also galvanized inside and outside, sold at wholesale by JAMES O. MORSE & CO., No. 79 John st., N. Y. 37 3mos

FORBES & BOND, Artists, 89 Nassau st, N.Y., Mechanical and general Draughtsmen on wood, stone, &c.

THE NEW YORK DAILY SUN for $2 a year. The miracle of the present age is accomplished by the Publisher of the New York Sun, in furnishing subscribers in clubs of thirty or more with the daily paper by mail for $2 a year. The Sun commenced in 1833; is the oldest, as well as the cheapest of all the cheap daily newspapers. It contains the latest news to be had by telegraph, mail, or express—is independent on all subjects, and has for its platform "Common Sense." Club rates—payable in advance, 5 copies one year $16·50; 10 copies $30; 15 copies $41·25; 20 copies $50; 25 copies $56·25; 30 copies $60. Single copies $4 a year. Papers to be sent in one wrapper, and only by mail, and to be directed to one person only. The postage on the Daily Sun within the State of New York is only 78 cents per year, and only $1·56 to any other part of the United States. Specimen copies sent gratis on application. Letters (always post paid) to be directed to MOSES S. BEACH, Sun Office, New York City. 37 tf

VAIL'S CELEBRATED PORTABLE STEAM Engines and Saw Mills, Bogardus' Horsepowers, Smut Machines, Saw and Grist Mill irons and Gearing, Saw Gummers, Ratchet Drills, &c. Orders for light and heavy forging and castings executed with dispatch.
LOGAN & LIDGERWOOD,
13 1y* 9 Gold st., N. Y.

FILMER & CO., Electrotypers, and Manufacturers of Electrotype Materials, 128 Fulton st., N. Y. Molding Presses, Batteries, Cases, Backing Pans, Shaving Machines, Metal Kettles, Planes, Blocks, Building Irons, etc., etc., on hand, or furnished at short notice, and at moderate charges. Adams' Improved batteries and black-lead machines also for sale. 23 tf

OIL! OIL! OIL!—For railroads, steamers, and for machinery and burning—Pease's Improved Machinery and Burning Oil will save fifty per cent., and will not gum. This oil possesses qualities vitally essential for lubricating and burning, and found in no other oil. It is offered to the public upon the most reliable, thorough, and practical test. Our most skillful engineers and machinists pronounce it superior and cheaper than any other, and the only oil that is in all cases reliable and will not gum. The Scientific American, after several tests, pronounced it "superior to any other they have ever used for machinery." For sale only by the inventor and manufacturer.
F. S. PEASE, 61 Main st., Buffalo, N. Y.
N. B,—Reliable orders filled for any part of the United States and Europe. 33 tf

NORCROSS ROTARY PLANING MACHINE.—The Supreme Court of the U. S., at the Term of 1853 and 1854, having decided that the patent granted to Nicholas G. Norcross, of date Feb, 12, 1850, for a Rotary Planing Machine for Planing Boards and Planks is not an infringement of the Woodworth Patent.
Rights to use the N. G. Norcross's patented machine can be purchased on application to N. G. NORCROSS,
Office for sale of rights at 27 State street, Boston, and Lowell, Mass, 45tf

NEW HAVEN MFG. CO.—Machinists' Tools, Iron Planers, Engine and Hand Lathes, Drills, Bolt Cutters, Gear Cutters, Chucks, &c., on hand and finishing. These Tools are of superior quality, and are for sale low for cash or approved paper. For cuts giving full description and prices, address, "New Haven Manufacturing Co New Haven, Conn. 19 tf

HARRISON'S 30 INCH GRAIN MILLS—Latest Patent.— A supply constantly on hand. Price $200. Address New Haven Manufacturing Co., New Haven, Conn. 31tf

BOILER INCRUSTATIONS PREVENTED—A simple and cheap condenser manufactured Wm. Burdon, 102 Front st., Brooklyn, will take every particles of lime or salt out of the water, rendering it as pure as Croton, before entering the boiler. Persons in want of such machines will please state what the bore and stroke of the engines are, and what kind of water is to be used. 41 tf

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Science and Art.

A Martyr of Science.

Alexandre Tinconi, fifty years of age, originally from Constantinople, and a man of letters, was recently found dead in Paris, in the modest lodgings which he occupied. It was proved beyond doubt that he had died of starvation. It was not want, however, that put an end to his existence, for at the time of his death he enjoyed a very considerable income; but, absorbed by his love of science, he forgot that man has a body no less than a soul to provide for, and would pass whole days together without taking food.

His dead body was found extended on a pile of books and manuscripts in every known language under the sun. His lodgings were full of them, and in some of the rooms this babel of literature touched the ceiling.

He spoke twelve languages, and was well skilled in many more. He had filled the highest posts of honor; rank and wealth were his, but he had renounced everything from pure love of science. The state of disorder in which his rooms were found is indescribable. As for his personal appearance, it was worse yet. His body was completely emaciated.

In the lodgings of the deceased were found a great number of rare and curious objects; among the objects most worthy of note was a complete collection of autographs of all the most distinguished wits, savans, and men of letters in Europe.

Resistance to Improvements.

The following from Archbishop Whateley's Annotations on Bacon's Essays, is a rich literary and scientific gem.

"It was the physicians of the highest standing that most opposed Harvey. It was the most experienced navigators that opposed Columbus' views. It was those most conversant with the management of the Post Office that were the last to approve of the plan of the uniform penny postage. For the greater any one's experience and skill in his own department, and the more he is entitled to the deference which is proverbially due to each man in his own province, the more likely, indeed, he will be to be a good judge of improvements in details, or even to introduce them himself: but the more unlikely to give a fair hearing to any proposed *radical* change. An experienced stage coachman is likely to be a good judge of all that relates to turnpike roads and coach horses; but you should not consult him about railroads and steam-carriages. Again, every one knows how slowly and with what difficulty farmers are prevailed on to adopt any new system of husbandry, even when the faults of an old established usage, and the advantage of a change can be made evident to the senses."

Improved Hay Rake.

Our engraving illustrates an ingenious improvement for which letters patent were granted to Nathan Martz, of Briar Creek Township Pa., Feb. 26, 1856.

The rake is applied to a carriage which is composed of two wheels, A A, revolving upon an axletree, B. Near the wheels and on the axletree are two brackets, D D, in which a rocking shaft, E, vibrates upon its trunnions. The rocking shaft, E, which with its additional contrivances constitutes the principal feature of the improvement, is made of wrought-iron, and of such a sectional size as to resist the strains of torsion, to the action of which it is submitted.

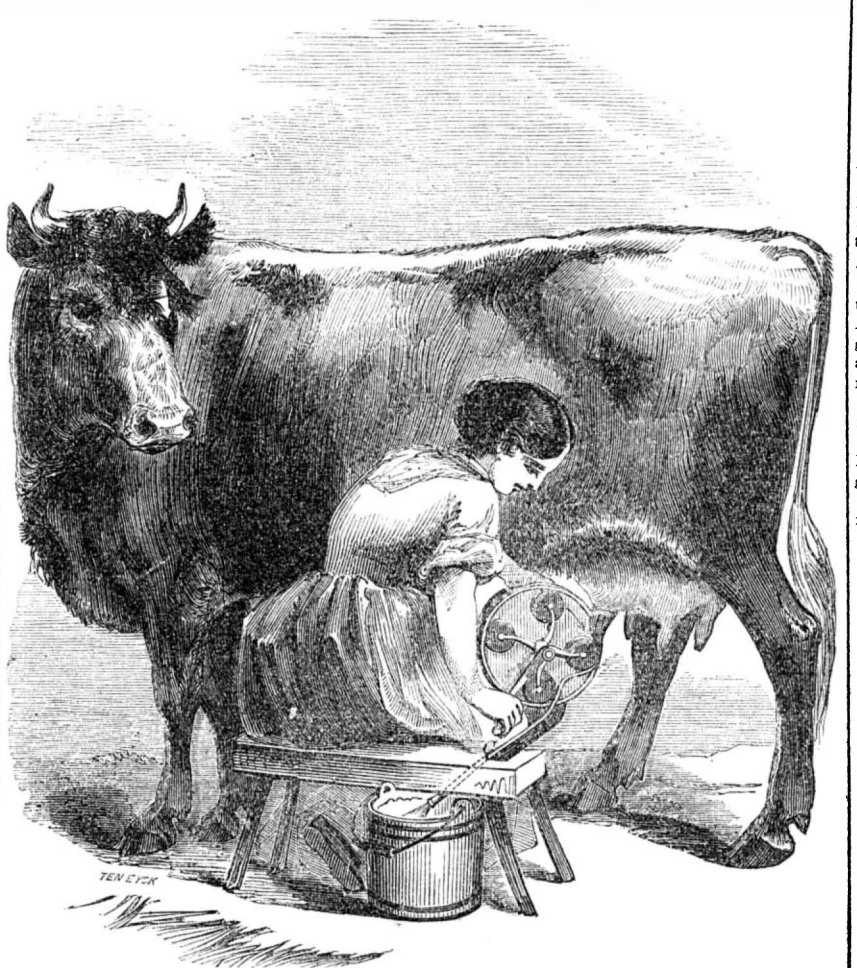
Each wire-tine, T, of the rake is separately and firmly fastened to the rocking shaft, E, by suitable means, such as by welding, for instance. Between the last two tines and near the extremity of the shaft, coil spring, S, is applied, which, being fastened at one extremity to the shaft, E, and at the other to the axletree, B, has a tendency to keep the rake vertically down upon the ground, supplying thus the necessity of heavy and clumsy implements for the performance of the intended work, saving a considerable amount of power lost (dead weight) and affording greater facilities for the adaptation to the inequalities of the ground. On the right hand side (facing front towards the horse) and near to the coil spring, S, is a hand lever, H, operating the rocking shaft, E, by the right hand of the driver seated on the seat, G.

By the above described arrangement, the management of the rake is very easy, and a very slight lifting power applied to the handle, H, will raise from the ground, and disencumber it of the hay or stubble it may have gathered. Should the hand of the operator be engaged, he can easily work the rake by applying pressure with his foot upon the lever, L. That lever is not attached to the rocking shaft directly, but is connected thereto by means of a chain link, M. The lever, L, balances over a supporting pin in the upright bracket, O.

The description of the implement is completed by that of the seat for the driver, arranged in such a manner that the center of gravity of the operator may pass through the axletree, or nearly so, in order to give stability to the apparatus, to decrease the resistance to the horse, and to afford the greatest facilities for its working and controlling the operation. For further information address the patentee as above, or J. A. Knight & Co., No. 334 Broadway, N. Y.

IMPROVED HAY RAKE.

NOVEL MILKING APPARATUS.



Contrivance for Milking Cows.

Our engraving shows a novel arrangement of mechanism, intended for the assistance of dairy maids and others, who milk cows. The milking is done by means of a crank attached to a shaft, on which there are four elastic arms, of steel, the ends of which are furnished with rollers, A, as seen in the cut. On one side of the ring within which the rollers, A, move, there is an elastic pocket, B, into which the animal's teat is placed. The back of this pocket is stiff, so that when the rollers, A, revolve, they will come in contact with the front part of the pocket and press it, with the teat against the back part. The teat thus pressed is relieved of its milk, which flows down through the pocket, and through the hollow case of the instrument into a tube, C, and thence into the milk pail. Nothing can exceed the simplicity of this device. Its size is convenient, and its cost not great. The inventor thinks that cows may be milked much quicker by this contrivance than by hand. Neither the hand of the operator nor the teats of the cow are liable to be made sore, as they are when the pressure of the hand is continually applied. If desirable the instrument may be made with two pockets, so as to milk two teats at a time. The inventor of this improvement is Mr. H. A. Reeves, of Williamson, Wayne Co., N. Y., from whom further information can be obtained.

We would suggest an improvement to this invention, to wit:—The attachment of a music box to be operated by the main shaft, in such a way as to discourse sweet melody during the delivery of the milk. Few animals are insensible to the charms of music, and even insects are said to lead a willing ear. Under its fascinating influence the old cow may be expected to stand perfectly still, while the flies, forgetting to bite, will buzz around with joy.

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